Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	**)**	
	)	**WC Docket No. 21-450**
Implementation of the Affordable Connectivity Program	**)**	

COMMENTS OF THE BENTON INSTITUTE FOR BROADBAND & SOCIETY

Kevin J. Taglang
Executive Editor
Benton Institute for Broadband & Society
1041 Ridge Rd, Unit 214
Wilmette, IL 60091
847-328-3040
headlines@benton.org

December 8, 2021

TABLE OF CONTENTS

Summary

In these comments, the Benton Institute for Broadband & Society[1] suggests how the Commission can craft its implementation of the newly-created Affordable Connectivity Program (ACP) to remain faithful to the Congressional directives and statements of intention in the Infrastructure and Jobs Act (IIJA). In 2020, the Benton Institute for Broadband & Society (Benton Institute or Benton) called on Congress to establish a broadband credit to ensure that many more people can afford high- speed internet access.[2] Benton now submits for the record two new, methodologically rigorous surveys that provide a wealth of important data on the needs of low- and middle-income Americans.

To be consistent with the purposes of the IIJA, the Commission must aim for the ACP to reach and offer high-speed, affordable broadband internet access service to all eligible households. It should promote increased competition among broadband providers to offer consumers more affordable, high-quality options for broadband service. The Commission

[1] Benton, a non-profit, operating foundation, believes that communication policy – rooted in the values of access, equity, and diversity – has the power to deliver new opportunities and strengthen communities. Our goal is to bring open, affordable, high-capacity and competitive broadband to all people in the U.S. to ensure a thriving democracy. These comments reflect the institutional view of the Benton Institute for Broadband & Society, and, unless obvious from the text, is not intended to reflect the views of its individual officers, directors, or advisors.

[2] Mignon Clyburn and Jon Sallet, "Make Broadband Far More Affordable," The Boston Globe, June 27, 2020, https://www.bostonglobe.com/2020/06/27/opinion/make-broadband-far-more-affordable/ and Sallet, Jonathan. October 2020. Broadband for America Now. Evanston, IL: Benton Institute for Broadband & Society. (p. 17-18) https://www.benton.org/publications/broadband-america-now

should aim, in particular, to use the ACP to connect communities of color, lower-income areas, and rural areas.

The IIJA invests over $42 billion in the deployment of broadband networks capable of at least 100/20 speeds. Moreover, operators of these networks will be required to offer low-cost broadband service options. Clearly Congress intends for everyone in the U.S. to have access to affordable, high-speed broadband of at least 100/20 speeds. The participants in the ACP deserve no less.

The market for connectivity for low-income households should be robust enough to support multiple price points—including ones which, in conjunction with the ACP's subsidy, would result in minimal or no outlays for qualifying households.

The Commission should consider asking ACP enrollees a few simple questions when they enroll for the benefit:

- In the previous 12 months, have you had broadband service that is similar to what you will be receiving through the ACP?
- In the previous 12 months, did you have a cellular data subscription for internet service?
- In the previous 12 months, did you have a fixed broadband subscription for home access?

As to measuring whether ACP results in expanding service or whether the subsidy is applied to an existing plan, it is worth noting that both goals are legitimate.

The Commission should ask providers to report the characteristics of the plans for which ACP beneficiaries are signing up. This should include:

- Type of service (i.e., wireless or wireline),
- Monthly data allowance,
- Download and upload speeds,
- Price to consumers before the ACP subsidy, and
- Whether the subscriber receives an additional subsidy (i.e., from a state program).

The Commission should not ask providers to report information on subscribers' use of plans (e.g., mobile data usage).

There is significant room for improvement in getting the word out about discount offers and the ACP. This is particularly the case for Latinos and older adults. Language barriers may have something to do with findings for Latinos. The Commission should focus on working with the organization that low-income consumers trust the most.

Connected devices are critical components of digital inclusion efforts. Congress recognized. But it will be a lost opportunity if the program does not help get affordable devices to enough low-income families.

BACKGROUND

Pursuant to the IJA,[3] the Wireline Competition Bureau released a Public Notice on November 18, 2021 seeking comment on the requirements for the ACP and a timeline for its rapid implementation.[4] The text of the IIJA establishing the ACP relies in large part on the Emergency Broadband Benefit Program[5] directives in the Consolidated Appropriations Act, 2021 by overlaying new ACP requirements on top of Emergency Broadband Benefit Program requirements, as well as by providing additional requirements. The IIJA, however, retains many of the Emergency Broadband Benefit Program requirements found in the Consolidated Appropriations Act.

I. Congress Contemplates that the Commission Will Establish a High Bar When Setting ACP Goals

To be consistent with the intent of Congress as expressed in the IIJA,[6] the Commission must aim for the ACP to reach and offer affordable broadband internet access service to all eligible households. The Commission's ACP rules should promote increased competition among broadband providers to offer consumers more affordable, high-quality options for broadband service. The Commission should aim, in particular, to use the ACP to connect communities of color, lower-income areas, and rural areas.

---

[3] Infrastructure Investment and Jobs Act, PL 117-58 (2021).

[4] Public Notice, *Wireline Competition Bureau Seeks Comment on the Implementation of the ACP*. (DA 21-1453, November 18, 2021).(Public Notice)

[5] See Consolidated Appropriations Act, PL 116-20 (2020), § 904(c).

[6] See IIJA. § 60101 and § 60303

The goal worth pursuing, Congress says, is "the condition in which individuals have the information technology capacity that is needed for full participation in the society and economy of the United States,"[7] technology that includes an affordable, reliable, high-speed broadband connection.

II. Congress Compels the Commission to Set a High Bar When Setting ACP Service Standards

In its Emergency Broadband Benefit Program rules, the Commission declined to apply minimum service standards to the internet service offerings eligible for Emergency Broadband Benefit discounts. [8] The Commission now seeks comment on that approach for the ACP.[9] The IIJA should be the Commission's guide in this regard.

Congress defines an "unserved location" as "a broadband-serviceable location...that—(i) has no access to broadband service; or (ii) lacks access to reliable broadband service offered with—(I) a speed of not less than—(aa) 25 megabits per second for downloads; and (bb) 3 megabits per second uploads; and (II) a latency sufficient to support real-time, interactive applications."[10] Congress goes on to define an "underserved location" as a location that is not

[7] IIJA, § 60302(10).

[8] *Emergency Broadband Benefit Program*, 36 FCC Rcd 4612. 4647-48, para. 73 (2021).

[9] Public Notice at ¶54.

[10] IIJA, §60102(a)(1)(A).

unserved and lacks access to reliable broadband service offered at a speed of not less than 100/20 megabits per second.[11]

The Commission's rules should not allow ACP discounts for service that would otherwise qualify a location as "unserved." Congress has found that "Access to affordable, reliable, *high-speed* broadband is essential to full participation in modern life in the United States."[12] The Commission's broadband threshold speeds of 25/3 megabits per second, although deemed "aspirational" when adopted,[13] are not reflective of today's broadband marketplace in which the average speeds for fixed broadband are 131.16/19.18 megabits per second (with latency of 14 ms).[14] The ACP should support the high-speed broadband service people in the U.S. have come to rely upon based on their market choices.

The IIJA invests over $42 billion in the deployment of broadband networks capable of at least 100/20 megabits per second speeds. Moreover, operators of these networks will be required to offer low-cost broadband service options. Clearly Congress intends for everyone in the U.S. to have access to affordable, high-speed broadband of at least 100/20 speeds. The participants in the ACP deserve no less.

---

[11] IIJA, § 60102(a)(1)(C).

[12] IIJA, § 60101 (emphasis added).

[13] 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate *Deployment*, 30 FCC Rcd 1375, 1405, para. 49 (2015).

[14] See Ookla, United States' Mobile and Fixed Broadband Internet Speeds October 2021 https://www.speedtest.net/global-index/united-states#fixed.

III. While Broadband Affordability for Low-Income Households is a Complex Concept, New Data Can Assist the Commission in Fashioning Its ACP Program.

The Commission asks how it should consider the concepts of broadband affordability, adoption, and availability for low-income households.[15] The Commission should recognize that affordability thresholds for consumers vary. But the monthly cost of a home broadband subscription remains the top barrier to adoption.

To assist the Commission in fashioning its ACP rules, Benton submits two recent studies conducted by Benton Senior Fellow Dr. John B. Horrigan. They provide reliable and current data on the importance of the barriers facing low and middle-income users in obtaining broadband access. They also suggest that the market for connectivity for low-income households should be robust enough to support multiple price points—including ones which, in conjunction with the ACP's subsidy, would result in minimal or no outlays for qualifying households

In June-July 2021, Dr. Horrigan conducted a high-quality telephone survey of 2503 Philadelphia households, a copy of which is provided hereto as Attachment A. The study shows that affordability is the most important obstacle to connectivity in low-income households.

Fifty-six percent of non-broadband adopters said that the cost of access was a problem. Asked to identify the most important reason for not having high-speed service at home, 42% cited affordability. The report showed the particular burdens that low-income households face in obtaining access to broadband. Thirty-one percent of low-income households reported a

[15] Public Notice at ¶118.

service interruption during the current pandemic, and 21% of K-12 households had service interrupted because the pandemic made paying the bill a challenge.

The Philadelphia study validates the effectiveness of discount programs in easing the financial burden of access as well as adding new users. It found that the rate of high-speed broadband connectivity had increased from 70% to 84% over the preceding two-year period, a remarkable increase over that short period. Significantly, fully half of the improvement is attributable to free or discounted programs; of the 14% increase in home broadband adoption from 2019 to 2021, free or discount offers account for 9% points. Moreover, about two-thirds of those who have signed up for free or discount offers say it would be difficult for them to have service without them.

Discount offers also have the highest incidence among target populations. Some 21% of households with kindergarten through 12th-grade students have signed up for one of these discount or free offers. For low-income Philadelphians (those whose incomes are below $20,000 annually), 17% had taken advantage of one of these offers. Thirty-one percent of low-income Philadelphia households lost internet connectivity during the pandemic due to difficulty paying.

Dr. Horrigan has also completed a national survey of low- and lower-middle income households,[16] provided as Attachment B hereto. The results are similar to what was found in Philadelphia.

The most significant finding in the national survey is that there is a large segment of the population that can pay something, but not market rates, for broadband. Of those panelists with some internet connectivity, about 27% say they could pay up to about $25/month. Those currently without broadband were asked to identify a price at which service would be too expensive for them. About 16% identified on average $25 as the maximum price point. These groups together make up more than one fifth (22%) of all low- and lower-income respondents.

The national survey also found that affordability is, by a considerable degree, the greatest obstacle to broadband access.[17] Respondents were asked to select one or more from a list of eleven reasons not to subscribe, and then asked to pick the most important of those considerations. Fifty-five percent of respondents listed cost as a factor,[18] and 21% listed cost as the most important barrier for them.[19]

---

[16] 12503 online responses from were supplemented by 383 telephone interviews. Each household had income of less than $50,000.

[17] 18% of respondents report a service disruption during the pandemic arising from inability to pay.

[18] [3]Runners up were cost of a computer (47%), smartphones are adequate (38%), and internet access available outside the home (32%).

[19] Other reasons most often listed as most important included, in descending order, smartphones are adequate (15%), cost of computer (11%), and internet access outside the home (5%).

According to BroadbandNow, carriers with large national footprints (e.g., Verizon, Comcast, Cox, Spectrum, and AT&T) have promotional rates that typically start at $40 or $50/month. Cox's program starts at $30/month and, after a year, increases $15 to $45/month. AT&T's monthly rate increases by $20.[20] But these are not necessarily the rates low-income consumers pay.

Dr. Horrigan's national survey found that, among households whose annual incomes are $50,000 or less:

- The average non-bundled monthly internet service cost was $62.[21] People who sign up for free or discount internet plans (just 9 percent of those surveyed) pay an average of $27 per month for service.
- 46 percent said it was at least somewhat difficult to pay for service .[22] One-third (34 percent) said it was "not too difficult" to pay for service. 20 percent said it was "not at all difficult."
- Some 40% of these households say they cannot afford to pay anything for service.

[20] BroadbandNow, Cheapest Internet Service in 2021 (last accessed December 7, 2021) https://broadbandnow.com/internet/best/cheap.

[21] Rural residents pay an average of $69 per month while those living in urban areas pay $59. Very low-income households (those whose annual incomes are $15,000 or less) pay $54 per month.

[22] 11 percent said it was "very difficult." 35 percent said it was "somewhat difficult."

- Some 23% of connected low- and lower-middle income population express no ability to pay for home broadband at home. They say they would not subscribe to service at "the right price," suggesting that they may need a free offer to get started.
- Some 56% of non-connected, non-broadband subscribers say they would not subscribe to the internet at the right price. Overall, this comes to 40% of non-broadband users who would not subscribe to service. They would likely need substantial service subsidies to get online, as well as digital navigation services including finding a service plan, assistance installing it, and training on how to use computers and (safely and securely) the internet.

- Another 22% are comfortable paying about $25 per month.
  - Among online panelists with some internet connectivity, some 27% of low- and lower-middle income households say they are comfortable paying something for service on a monthly basis – about $25. This is roughly the midpoint value of what people pay for discount offers ($27) and those who pay for such offers and find it "not difficult" to pay for service.
  - Those who do not subscribe to any internet service (no broadband, satellite, or dial-up service) received a question asking them to identify a price at which service would be too expensive for them. Some 16% of non-subscribing respondents identified that, on average, $25 would be too expensive for them.

- The remaining 38% can pay rates in line with entry level broadband plans (about $55 per month).
    - For households with internet connectivity, they find their service either not too difficult or not at all difficult to afford. They pay an average of $55 per month. This group seems satisfied with paying for service at costs in line with entry-level plans.
    - For nonconnected respondents, one-quarter cited a figure above $40 per month as too expensive, with the average figure being $72 per month.
- A large majority of non-broadband subscribers (62 percent) would require significant cost relief (relative to market prices) to have broadband service at home.
- 18 percent of low- and lower-middle income households said that since the pandemic they experienced a service interruption due to difficulties in paying their monthly internet service fee.

Dr. Horrigan's national study also finds that a sizable portion of the "subscription vulnerable" rely on free or discount programs.[23] Some 34 percent use one of those programs for home connectivity. About the same number (32 percent), however, say it is too difficult to sign up for one of those programs. Another 26 percent say they do not qualify (even if it is likely

[23] The research found that connectivity is tenuous for many households. The "subscription vulnerable" are defined as those households that have lost service, say fitting the internet into their budget is very difficult, and/or are living at or near the poverty level.

that most do) and 8 percent say they could not demonstrate that their households qualify for such offers.

IV. Tracking How the ACP Delivers Value

The Commission seeks comment on how the ACP is delivering value to low-income consumers.[24]

The Commission should consider asking ACP enrollees a few simple questions when they enroll for the benefit:

- In the previous 12 months, have you had broadband service that is similar to what you will be receiving through the ACP?
- In the previous 12 months, did you have a cellular data subscription for internet service?
- In the previous 12 months, did you have a fixed broadband subscription for home access?

As to measuring whether ACP results in expanding service or whether the subsidy is applied to an existing plan, it is worth noting that both goals are legitimate. Dr. Horrigan's Philadelphia survey found that 46 percent of Philadelphia households said that their monthly broadband service is "very" or "somewhat" difficult to afford. The survey also found that 31% of low-income households in Philadelphia lost service during the pandemic due to changes in economic circumstances. Casting the ACP as something that should only target those without

[24] Public Notice at ¶119.

service instead of those who have it but may struggle with paying for it does not reflect what data tells us about low-income households and internet service. Many need significant cost relief to have access. Others may forgo other goods and services to maintain an internet subscription, but still find the cost a significant strain on their budgets.

V. Tracking ACP-Supported Broadband Plans

The Commission asks if ACP providers should indicate the service plan characteristics associated with a subscriber's service plan.[25]

The Commission should ask providers to report the characteristics of the plans for which ACP beneficiaries are signing up. This should include:

- Type of service (i.e., wireless or wireline),
- Monthly data allowance,
- Download and upload speeds,
- Price to consumers before the ACP subsidy, and
- Whether the subscriber receives an additional subsidy (i.e., from a state program).

The Commission should not ask providers to report information on subscribers' use of plans (e.g., mobile data usage). This data, by itself, does not provide enough context about users to yield solid interpretation of results. Consumers may, for many months, use modest amounts of data. However, in a given time period (e.g., a circumstance requiring more frequent interaction

[25] Public Notice at ¶120.

with a health care provider), a generous data allowance may provide a consumer the ability to carry out important tasks (and to do so without incurring charges for exceeding data caps). Such a spike in data usage may serve a crucial purpose for the user. It may not, however, sizably change the average usage of data for that customer.

VI. The Importance of ACP Outreach

The Commission seeks input on a number of issues concerning promotion of awareness of the ACP.[26]

Dr. Horrigan's national study finds that of all households whose annual incomes are below $50,000 (e.g., those from both the online panel and telephone survey):

- 32 percent had heard of local public libraries increasing their Wi-Fi signals so people could go online for free.
- 25 percent had heard of discount or free internet offers such as those offered by Comcast Internet Essentials, T-Mobile, Cox, or Charter.
- 23 percent had heard of the Emergency Broadband Benefit Program.

This comes to 37 percent of all respondents who had heard of either free or discount offers or the Emergency Broadband Benefit Program.

[26] Public Notice at sSection G.

On the whole, there is significant room for improvement in getting the word out about discount offers and the Emergency Broadband Benefit Program. This is particularly the case for Latinos and older adults. Language barriers may have something to do with findings for Latinos.[27]

The Commission should focus on working with the organization that low-income consumers trust the most. The national study finds that for all households whose annual incomes are $50,000 or below:

- 31 percent trust local public libraries a lot.
- 20 percent said they trust schools.
- 14 percent trust community non-profits.
- 8 percent trust internet service providers a lot.

For those who trust any of these institutions "a lot," 42 percent have heard of either a free or discount program, or the Emergency Broadband Benefit Program. For those who do not trust any institution "a lot," just 24 percent have heard of these programs.

[27] The Philadelphia study showed that survey respondents who opted to take the survey in Spanish had significantly lower broadband adoption rates than Latinos who chose to take the survey in English. This suggests that respondents for whom Spanish is the primary language are less likely to be online – and perhaps less likely to be aware of programs that might help them gain connectivity.

VII. The Importance of Low-Cost Devices

The ACP will permit eligible households to receive a discount off the cost of broadband service and certain connected devices, and participating providers to receive a reimbursement for providing such discounts. The Commission seeks input on devices.[28]

In research published in 2016, Benton Senior Faculty Research Fellow Dr. Colin Rhinesmith, an Associate Professor and Director of the Community Informatics Lab in the Simmons University School of Library and Information Science, found that many individuals and families with limited monthly incomes across the country have looked to local organizations in their communities to gain access to affordable broadband service and connected devices.[29] Half of the organizations that participated in that study recognized that making low-cost computers available was a key part of their broader digital inclusion efforts. Dr. Rhinesmith also learned that many of these organizations worked to refurbish and resell computers at more affordable prices.

Dr. Rhinesmith recently revisited this subject and interviewed PCs for People's Casey Sorensen.[30] PCs for People has partnered with Cox Communications to provide low-cost

---

[28] Public Notice at Section C.

[29] Rhinesmith, Colin. *Digital Inclusion and Meaningful Broadband Adoption Initiatives*. Evanston, IL: Benton Foundation, January 2016. benton.org/broadband-inclusion-adoption-report

[30] Rhinesmith, Colin. "Why Low-Cost Devices Matter for Broadband Policy." Benton Institute for Broadband & Society. May 25, 2021. https://www.benton.org/blog/why-low-cost-devices-matter-broadband-policy

computers to eligible families through its Connect2Compete program[31] and, more recently, the Emergency Broadband Benefit Program. Cox Communications launched the partnership with PCs for People in March 2020. The partnership allowed PCs for People to provide the refurbished devices at a scale that met the demand of the Connect2Compete program.

PCs for People had to build a secure process to be Cox's device supplier. PCs for People built new systems to create a sign-up process and to connect with the Commission to do eligibility verification, subscriptions, and reimbursements. That process allowed Connect2Compete and Emergency Broadband Benefit registered and validated participants to use the Emergency Broadband Benefit Program's $100 credit. Ebonee Younger, product manager at Cox Communications, said that, in terms of low-cost devices, the "$10 to $49.99 is that sweet spot for these families as far as what they can afford."

Dr. Rhinesmith said, "While the Emergency Broadband Benefit Program represents an important step forward to address the challenges of low-cost internet and low-cost devices, too few internet service providers are offering devices through the Emergency Broadband Benefit Program. This may be because the subsidy for devices, as mandated by Congress, is too small — or not enough providers had preexisting relationships with computer refurbishers as Cox did.

"Connected devices are critical components of digital inclusion efforts. Congress recognized this in the legislation creating the Emergency Broadband Benefit Program. But it will be a lost

[31] The Connect2Compete program provides eligible families with low-cost internet service at $9.95 a month.

opportunity if the program does not help get affordable devices to enough low-income families."

CONCLUSION

Benton urges the Commission to move swiftly to create and launch a competitive ACP, that is true to the findings of Congress as articulated in the IIJA.

Respectfully submitted,

/s/ Kevin J. Taglang

Kevin J. Taglang
Executive Editor
Benton Institute for Broadband & Society
1041 Ridge Rd, Unit 214
Wilmette, IL 60091
847-328-3040
headlines@benton.org

December 8, 2021

ATTACHMENT A

CONNECTING PHILADELPHIA
2021 Household Internet Assessment Survey

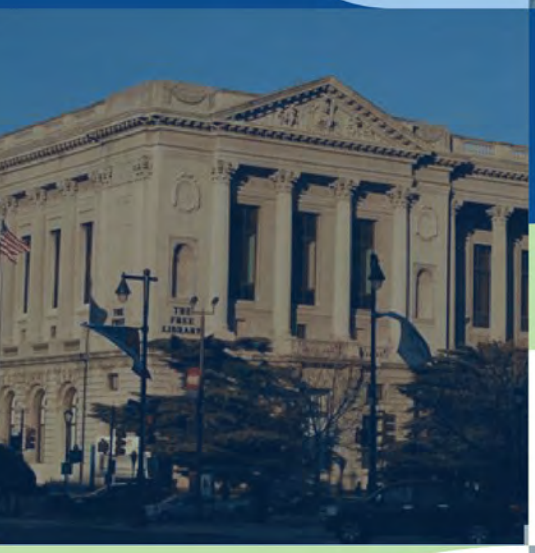
by
Dr. John B. Horrigan

October 20, 2021

CONNECTING PHILADELPHIA

2021 Household Internet Assessment Survey

A survey assessment on the positive impact of investments to promote digital advancement in the City of Philadelphia



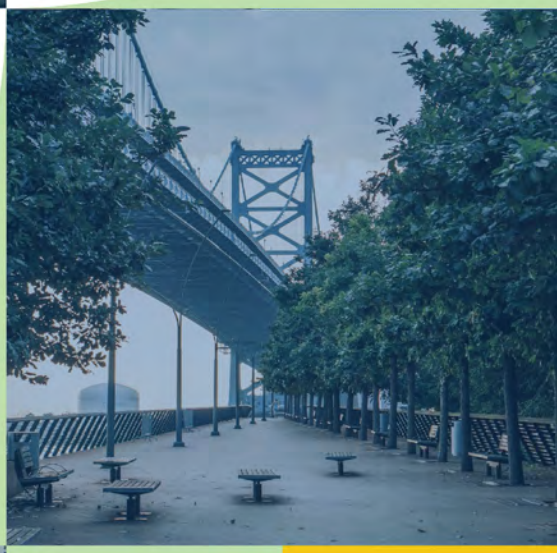


Table of Contents

Wilco

October 20, 2021

City of Philadelphia
Office of Innovation and Technology
1234 Market Street, 18th Floor
Philadelphia, PA 19107

Dear City of Philadelphia,

For over a decade, the City has been committed to driving equity and inclusion through its technology-based services. Beginning in 2010 with the emergence of the cross-sector collaborations to provide city-wide digital literacy programs, to the subsequent establishment of digital impact alliances, or the more recent implementation of smart city road maps and the sharing of open data to create user-friendly public applications, Philadelphia has long been addressing the issue of digital inequality. However, it was the onset of the Covid-19 pandemic that most significantly magnified the persisting challenges of the digital divide, not only in Philadelphia, but in cities across the country.

On behalf of our expert team of partners, it has been a privilege for Wilco to continue our dedicated efforts to address the City's most critical technology divides by now assisting with the inaugural 2021 Philadelphia Household Internet Assessment Survey. We envision the City now being able to, 1) Use current data to strategically create more detailed roadmaps towards reaching digital equity, 2) Leverage K-12 broadband investments to extend benefits to the city as a whole, and 3) Ensure that internet connectivity is inclusive of communities that have historically lacked access to opportunities for better employment, healthcare, and education.

To that end, our team has created a new dataset that goes beyond the numbers and delves into the hidden dimensions of Philadelphia's divide. Our analysis used phone surveys to understand how the city's residents use the internet and why and how the lack of internet has impacted K-12 students, and what people perceive as barriers to internet access. This research demonstrates the progress of current programs to connect thousands to the internet and devices during the pandemic. It also underscores the disproportionate rates of adoption among lower income African American and Hispanic households and aging adults. The new data lastly points to the need for sustained and equitable efforts to ensure every Philadelphian has equal access to the internet and critical digital tools to empower their households and improve their lives.

Ultimately, this assessment is just the beginning. A moment within the movement. An investment of Philadelphia for Philadelphians. The city can now utilize this timely and relevant data that provides a new baseline to help position Philadelphia for a strong and sustainable future that bridges our communities, our workforce, and our economic development. This is the time. And we are proud to share our findings and explorations with the City and the Nation.

Sincerely and with Philadelphia Pride,

Brigitte Daniel Corbin
Chief Executive Officer, Wilco

Foreword

When Philadelphia pivoted to deliver services virtually at the onset of the pandemic, the shift from in-person to online services demanded immediate solutions for all Philadelphians to be able to get online at home. Encouragingly, The City of Philadelphia's Household Internet Assessment Survey, which sought to measure the progress of broadband programs and to understand how residents navigated the economic impacts of the pandemic to get online, reveals that Philadelphia is narrowing the gap -- 84% of Philadelphia homes are now connected to high-speed internet.

As the following report makes clear, programs are working. And yet, there is both opportunity and urgency for more action to be taken. Today, 1 in 6 Philadelphians do not have broadband at home. And, of those that heard of any broadband discount program, only 14% successfully enrolled. Philadelphia can continue to make progress in key ways -- invest in awareness and community partnerships to promote broadband programs and services through trusted local networks, seed and sustain a local ecosystem for digital equity that builds on existing efforts to create a coordinated and data-informed platform for collaboration; and, with an unprecedented federal investment opportunity at the tip of Congress's pen, it can position itself to leverage digital equity funds from all sectors to drive change on the ground.

Today, cities across the United States are focused on economic recovery from the Covid-19 pandemic. For Philadelphia, a city with the ninth largest urban economy in the world and fourth in the nation, ensuring a future that provides economic stability and growth is directly linked to building an inclusive, digitally-skilled and digitally-connected population. All Philadelphians stand to benefit from universal broadband adoption and further investment in digital advancement, an approach to economic equality that equips people with the tools and strategies to leverage the full spectrum of technology to improve their standard of living.

Marta Urquilla
President, Centri Tech Foundation

CENTRI TECH FOUNDATION

Acknowledgments

Wilco would like to thank The Mayor's Fund for Philadelphia on behalf of The City of Philadelphia, Office of Innovation and Technology, for its support of this work to benchmark progress by the city and its partners to close the digital divide. The OIT team, in particular Juliet Fink Yates, Ashley Pollard, Andrew Buss, Labonno Islam, and Sarah Hollister, provided critical guidance and input throughout the project.

We would like to thank our partners for their dedication, spirit of collaboration and shared learning that made the overall execution and quality of this project possible:

Thank you to SSRS, Inc., led by Chintan Turakhia and Jennifer Su, for their thought partnership, diligence, and expert approach to implementing the survey methodology with such rigor.

We are especially indebted to Dr. John B. Horrigan for the design and analysis of the survey. Dr. Horrigan is a researcher who leads with a commitment to capturing people's real experiences through data. His expertise and thoughtful insights are the foundation of this assessment.

We are grateful to Centri Tech and Centri Tech Foundation (CTF), and to Marta Urquilla, President of CTF, for her steadfast management of this project. We extend our gratitude to Centri team members Laura Frances Mueller-Soppart and Matthew Snider for their direct day-to-day support and contributions to the production of the final report, and to analysts, Joanie Weaver and Mahi Gurram, for production of the data visualizations and research support, respectively.

Report designed by Candice Steele.

PHILADELPHIA'S DIGITAL DIVIDE BY THE NUMBERS

A City-Wide Survey Shows that Programs to Tackle the Digital Divide Have a Positive Impact

John B. Horrigan, PhD
October 2021

Executive Summary

The City of Philadelphia's Household Internet Assessment Survey finds that the city has made significant progress in helping more residents gain high-speed internet service at home. In 2019, the federal government reported that 70% of households in Philadelphia were connected at home with broadband subscriptions. By mid-2021, the Philadelphia Household Internet Assessment Survey finds that 84% of homes subscribe to high-speed service (either cable modem, fiber optic, or digital subscriber line service). More than half of the increase is due to free or discount connectivity programs, which have loomed large in the pandemic, including Comcast Internet Essentials, T-Mobile's Project 10Million, the federal government's Emergency Broadband Benefit, and PHLConnectED. Households with K-12 students have been the greatest beneficiaries of these programs.

At the same time, progress is tenuous. Fully 32% of Philadelphia households are "subscription vulnerable." These are low-income households that suffered service interruption during the pandemic for economic reasons and would find it hard to maintain service without the assistance of discount programs. Subscription vulnerable households are more likely to be African American and have K-12 children.

Affordability of internet service is a key factor preventing households from subscribing to broadband or maintaining service. More than 90% of those with broadband subscriptions in Philadelphia say a monthly fee of over $20 per month is too expensive for their budgets, and many of these households have to weigh household internet bills against other needs. Among households that do not subscribe to broadband service, the costs of internet service and computing devices are the chief reasons they forgo service.

However, affordability is not the only issue. Many Philadelphia residents – particularly households with students – need to procure a computer and acquire the digital skills to use the internet in a meaningful way. All of this leads to significant digital divides in particular demographic categories. Older adults are far less likely than their younger Philadelphia counterparts to have home broadband subscriptions or to use discount offers for service. The same is true for Spanish-speaking Hispanic households and households with incomes near or below the poverty line.

The Philadelphia Household Internet Assessment Survey offers guidelines on how the city can reimagine its social safety net, focusing on three important ingredients:

- **Persistence in outreach:** Many low-income households are unaware of programs that could help them afford service. Ongoing outreach and education can help reach potential beneficiaries.
- **Patience** in meeting people where they are: Households without broadband may not embrace programs to foster connectivity overnight. Anchor institutions that provide digital support to residents must plan for repeated interactions with households that need help to get and stay online.
- **Partnerships:** Government, philanthropy, and business must work together to provide discount offers and training resources to help people connect to and use the internet.

The City of Philadelphia can consider the following strategies to address the city's digital divide.

Increase Public Awareness of Available Discount Internet Programs

The City of Philadelphia can invest in funds for outreach that would likely get more people online. The city could also partner with local digital inclusion organizations to facilitate community support for completing discount program applications. Of those city residents that heard of any discount program, only 14% successfully enrolled. According to a July 2021 Benton Institute report, New Orleans, Detroit, and Baltimore have higher overall EBB enrollment rates than Philadelphia; there is room for improvement.

Adopt a Targeted Approach to Meet the Adoption Needs of Philadelphians

The survey shows that home broadband subscription and computer adoption rates vary among different demographic groups. Spanish-speaking residents, low-income households, and older adults have particularly acute gaps in connectivity. This means that the city could tailor strategies to meet specific needs. Older adults may have special needs for digital skills training. Low-income residents may need assistance in finding programs for affordable internet plans and computing devices.

Promote and Support a City-wide Approach to Digital Equity

Digital divides in Philadelphia play out differently across neighborhoods and demographic groups. The approach of "meeting people where they are" is foundational to digital adoption programs, which means soliciting participation from city residents in designing initiatives to address gaps. To that end, the City of Philadelphia could direct investments to local community based organizations that are already trusted entities in promoting digital equity, and partner with anchor institutions to thoughtfully scale its digital navigators and digital literacy efforts.

Ultimately, digital equity work happens across sectors. During the pandemic, the city and other stakeholders came together to lead efforts to connect residents. To build on current momentum and progress across the city, more resources, capacity, and coordination are needed to bolster local digital equity efforts. The city would benefit from sustained investment to address ongoing efforts to close Philadelphia's digital divide.

The City of Philadelphia commissioned the Philadelphia Household Internet Assessment Survey in order to fill knowledge gaps about the city's digital divide that the pandemic brought to the surface. The telephone survey asked a representative sample of 2,503 Philadelphia households about the tools they use to go online and how they have coped with internet connectivity during the pandemic. The survey was conducted in June-July 2021.

Key Data Takeaways

Technology adoption

- 84% of Philadelphia households have home high-speed internet connections, a marked increase from the 70% reported in the 2019 American Community Survey (ACS).
- 75% of Philadelphia households have a working desktop or laptop computer, compared with 71% in 2019 (according to the ACS).

Impact of connectivity programs

- 9% of Philadelphia households have signed up for a discount internet program, such as Comcast Internet Essentials, T-Mobile's Project 10Million, the Emergency Broadband Benefit, or PHLConnectED.
- 17% of low-income households have service due to a discount offer.
- 21% of K-12 households have signed up for a discount offer.

Awareness of connectivity programs

- 31% of all Philadelphia respondents have heard of discount or free internet offers from Comcast Internet Essentials, T-Mobile's Project 10Million, or PHLConnectED.
- 13% of all respondents have heard of the Emergency Broadband Benefit.
- 8% of all respondents have heard of the PHLConnectED program.

Affordability

Non-broadband adopters cited one or more of the following reasons for forgoing service:

- 56% said the cost of monthly access fee was a problem
- 50% said they could not afford the cost of a computer
- 49% said the smartphone allowed them to accomplish all they need online
- 43% said they did not want or need service
- 31% said they were not comfortable using the internet or a computer

When asked to identify the most important reason they do not have high-speed service at home, a plurality (42%) cited affordability (e.g., monthly access fee or computer cost).

K-12 households

- 91% of K-12 households have high-speed internet home subscriptions, up from 70% in 2019 (ACS).
- 85% of K-12 households have a desktop or laptop computer, compared with 76% in 2019.
- Some 12,000 Philadelphia homes with K-12 students do not have a home broadband subscription, significantly lower than the 28,000 who lacked service in 2019.

Groups with the lowest home broadband subscription rates

- Older adults: 67% of those 65 or older subscribe to broadband at home.
- Spanish speakers: 67% of residents who took the survey in Spanish have broadband at home, a much lower rate than for Hispanic residents in the city who opted to take the survey in English (83%).
- Low Income: 71% of households whose annual incomes are $20,000 or less subscribe to broadband.

Introduction

When the pandemic limited economic and social activity in early 2020, many policymakers, business, and community leaders were shocked to discover that sizable portions of U.S. households lacked the means to access the internet. This spurred action to promote digital connectivity, especially in schools, as virtual learning became the norm. Local governments, philanthropic organizations, non-profits, and businesses pitched in to address gaps in their communities.

At the national level, there is evidence that these efforts have paid off for students. Census Pulse data—which come from a Census Bureau survey initiative to understand how the pandemic has impacted people's lives —show this. Households with students have seen reliable internet and computer availability increase from 61.4% to 75.6% (for computers) and 65.2% to 75.9% (for the internet).

As heartening as these trends are, they invite additional questions for communities about how they have responded to internet and computer access gaps in the past 18 months.

- Have specific initiatives to bolster connectivity, such as the federal government's Emergency Broadband Benefit (EBB) and local programs such as PHLConnectED, had an impact and, if so, how much?
- What have been the changes in internet and computer connectivity for households with students between kindergarten and 12th grade (K-12)?
- Do changes in internet and computer connectivity vary by respondents' race or ethnicity or along socio-economic lines?
- Have people experienced connectivity challenges, such as maintaining their internet subscriptions throughout the pandemic or difficulties in signing up for discount internet programs?
- Why do some households not have home high-speed internet service?

This report addresses these questions using data from a June-July 2021 telephone survey of a representative sample of 2,503 Philadelphia households. The sample size permits analysis of population groups, such as African American and Hispanic residents, low-income residents, and older adults, that are likely to be of interest to stakeholders in the city. The report will pay special attention to the adoption of digital tools for K-12 households in Philadelphia, that is, households with people between the ages of 5 and 18 (inclusive). In addition to English, the survey was offered in Spanish, Russian, Arabic, Vietnamese, and Mandarin.

I. Connectivity in Philadelphia

The most reliable data on internet and computer adoption for cities comes from the American Community Survey (ACS), a large-scale national survey that the Census Bureau conducts to understand household make-up and assets, which includes basic questions about digital tools households have at hand. The ACS asks whether they have wireline broadband at home, and specifically, whether a household subscribes to cable modem service, digital subscriber line (DSL) service, or fiber optic service. The ACS also asks whether a household has a smartphone, a desktop or laptop computer (as a single response option), or a tablet computer.

The Household Internet Assessment Survey for the City of Philadelphia asked similar questions about computer access and the following one about wireline broadband access at home: "Do you or any member of your household access the internet using a high-speed, broadband internet service such as Comcast XFinity, Verizon FiOS, or DSL service installed in your household?"

Of particular focus for this report will be household wireline broadband adoption and computer ownership (either desktop or laptop), with some discussion of tablet computer adoption at home. These tools are useful for online tasks such as schoolwork and telehealth. Research has shown that reliance exclusively on smartphones in wireless service plans is associated with lower grades and rates of homework completion for students.

It is also worth noting that having broadband service at home is not always sufficient for ensuring that households can use the internet for school or work. Training on how to use digital tools is important for many, and research has shown that such training significantly increases the likelihood that people will use the internet for education and job search.

The following table shows results for the ACS 2019 survey for Philadelphia (the most recent survey with publicly available results) and the June-July 2021 Philadelphia Household Internet Assessment Survey.

Table 1: Digital tool adoption in Philadelphia in 2019 and 2021

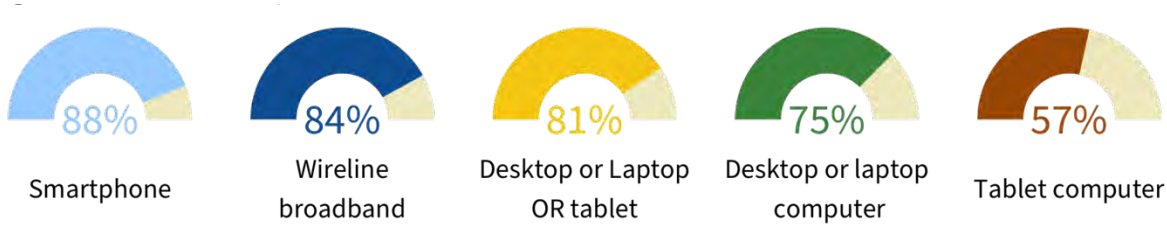
	2019	2021
Smartphone	84%	88%
Wireline broadband	70%	84%
Desktop or Laptop computer	71%	75%
Tablet computer	58%	57%
Desktop or Laptop OR Tablet	79%	81%

* 2019 ACS data

† 2021 Assessment Survey data

The 14-percentage point difference between 2019 and 2021 for wireline broadband subscriptions at home is remarkable. 7 in 10 Philadelphia households had broadband in 2019, while more than 8 in 10 did by 2021. Some of the difference, of course, is due to the general pattern of broadband adoption at home growing over time. The Pew Research Center found that between 2019 and 2021, home broadband adoption increased from 73% to 77% for the United States. Philadelphia's much larger increase from 70% to 84%, however, invites further scrutiny. The city-wide survey of 2021 offers some explanations.

Digital Tool Adoption in Philadelphia



An additional note on metrics: the ACS includes a measure called "broadband of any type" which includes services such as satellite and cellular data as part of broadband adoption. For the city of Philadelphia, 84% of households in 2019 had broadband of any type – above the 70% figure for wireline broadband. That difference consists almost entirely of households who have a cellular data plan (e.g., a smartphone) but no wireline service. However, as noted, reliance on cellular data only is insufficient for online classes, telehealth, working from home, and other data intensive applications.

II. Programs to promote broadband made a positive difference for Philadelphia

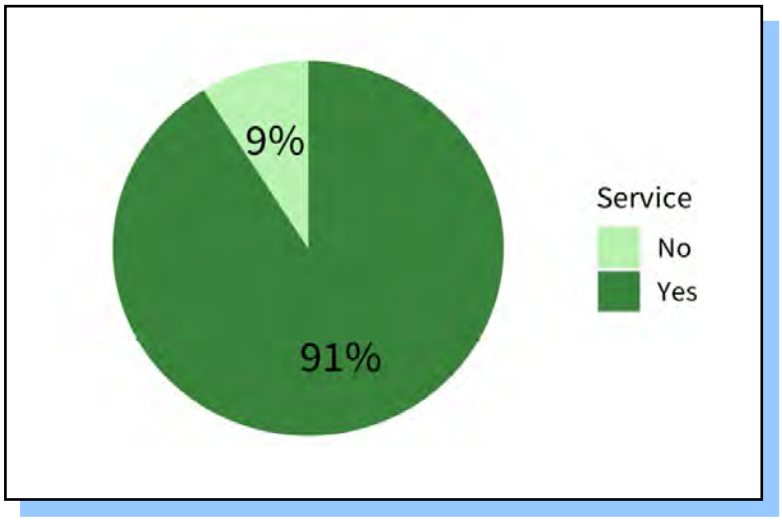
The survey asked respondents whether they had signed up for programs that typically take aim at particular sub-populations, such as low-income households or households with K-12 students. Some programs, such as Comcast Internet Essentials, predate the pandemic; others, such as the Emergency Broadband Benefit (EBB), came about because of the pandemic. The survey asked whether respondents signed up for Internet Essentials, T-Mobile's Project 10Million, or PHLConnectED.

Overall, 9% of respondents said they had signed up for one of these special, low-cost home internet offers. In other words, without the discount offers, Philadelphia's home broadband adoption rate would be 75%, not 84%. Beyond the aggregate impact are notable variations for different groups, with the largest impact in K-12 households.

Table 2: Broadband adoption rates in Philadelphia households with and without connectivity programs

	All	K-12	Income <$20K	Hispanic	Black, Non-Hispanic	Age 65 and older
TOTAL	84%	91%	71%	77%	82%	67%
Adoption without programs	75%	70%	54%	62%	69%	62%
Increase attributable to programs	9%	21%	17%	15%	13%	5%

91% of K-12 households have high-speed internet at home



Beyond the aggregate 9-percentage point boost from connectivity programs, there are distinct variations for other population groups, most importantly for K-12 households. Among these households, one in five (21%) have home broadband connectivity from a discount internet offer. For low-income households (with annual incomes of $20,000 or less), that figure is 17%. Both African American and Hispanic residents also reported above-average use of discount programs for home broadband service.

III. Schools have done a good job of getting computers into K-12 households, and programs that offer internet service discounts have had a big impact on K-12 household broadband adoption

The Philadelphia Household Internet Assessment Survey findings, in conjunction with 2019 ACS data, show significant digital progress for households with people between the ages of 5 and 18. (Note that the ACS specifies households with children between the ages of 6 and 17 to characterize homes with school-age children). The survey captures households in Philadelphia with K-12 students, which includes students enrolled in the School District of Philadelphia, charter schools, independent schools, and parochial schools.

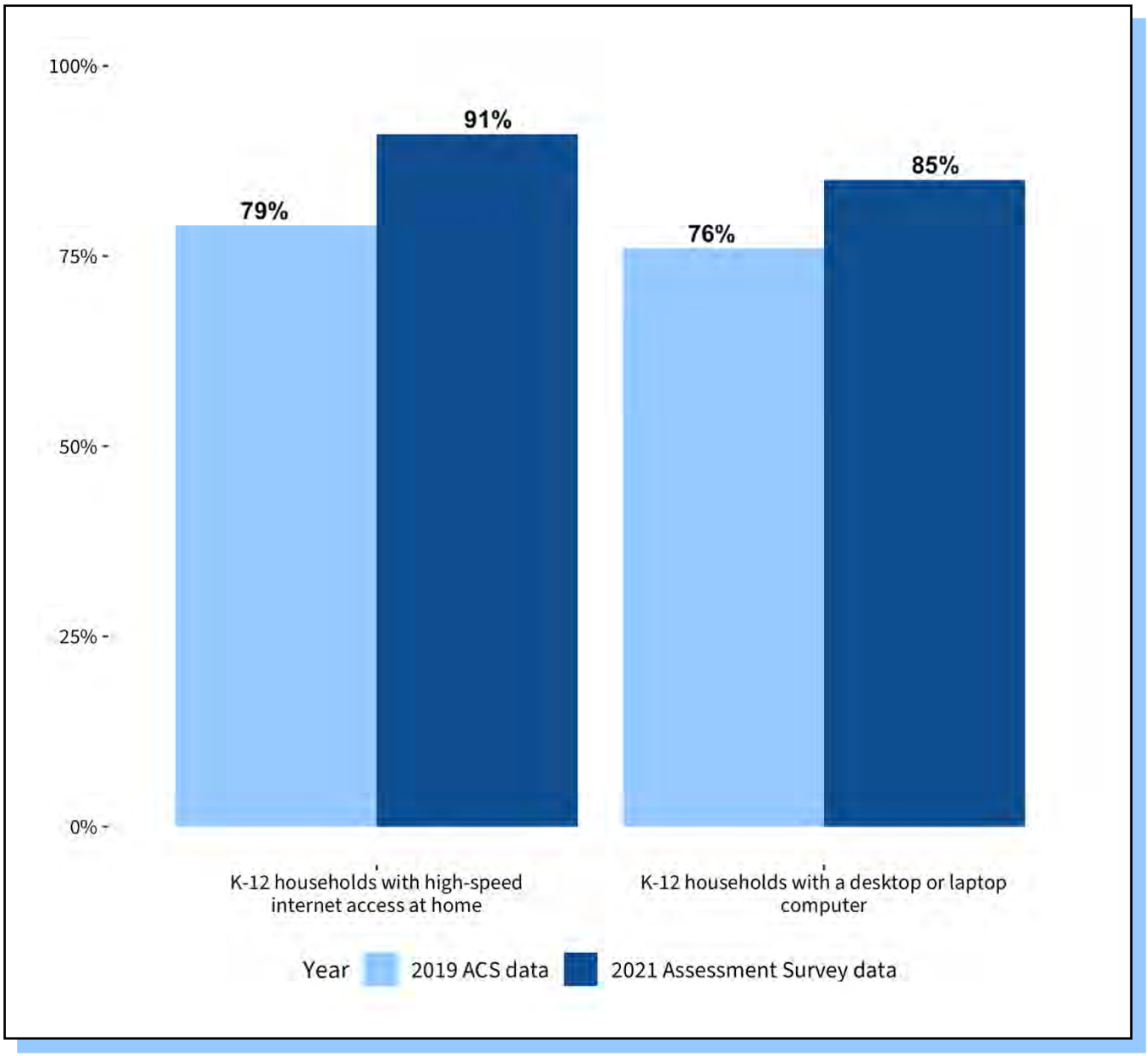
Table 3: Digital tool adoption in K-12 households in 2019 and 2021

	2019	2021
Smartphone	94%	97%
Wireline broadband	79%	91%
Desktop or Laptop computer	76%	85%
Tablet computer	73%	73%
Desktop or Laptop OR Tablet	87%	92%

* 2019 ACS data

† 2021 Assessment Survey data

K-12 households in Philadelphia with high-speed internet access or computer access at home



There have been notable advances in home wireline broadband and computer adoption for Philadelphia K-12 households since 2019. Much of that has to do with K-12 households taking advantage of discount or free offers for home internet service. Four in ten (40%) K-12 households have heard of discount broadband programs, such as Comcast Internet Essentials or T-Mobile's Project 10Million. Among K-12 households that have heard of any programs to promote connectivity (not just offers such as Comcast Internet Essentials, but also PHLConnectED and the Emergency Broadband Benefit), 21% have successfully signed up for a discount offer.

Without the benefit of discount programs that offer K-12 households a break on monthly internet service fees, far fewer K-12 households (perhaps as little as 70%) would have high-speed internet service at home—not 91%.

The survey asked whether households had taken advantage of programs to provide computers for schoolwork or internet access at home for schoolwork since the pandemic began. By a sizable margin, households with school-age children were more likely to have received a computer from their child's school than internet access. Specifically:

- 57% of K-12 households said that since the onset of the pandemic, they had received a computer from their child's school for schoolwork. Another 2% got a computer from a program not affiliated with their child's school, and an additional 2% said they had received a computer from a program affiliated both with their child's school and another program.
- Just 15% of households with school-age children said they participated in a program from their child's school which resulted in them obtaining internet service at home for schoolwork. Another 3% found service via a program not associated with their child's school and 3% cited a program affiliated with the school and another program. (Note that affirmative responses to this question may overlap with those who said they signed up for programs such as Comcast Internet Essentials or EBB.)

The impact of programs to distribute computers to K-12 households is evident when comparing 2019 ACS data to results from this survey. Specifically:

- The ACS found that, for households with children between the ages of 6 and 17, 76% had a desktop or laptop computer in 2019.
- The Assessment Survey, which asked about households with people between the ages of 5 and 18, found that 85% had a desktop or laptop computer in 2021.

Even as computer and internet access gaps have narrowed in Philadelphia, some Philadelphia K-12 students still cannot go online from home. Data from the 2019 American Community Survey show that approximately 250,000 people between the ages of 5 and 18 live in the City of

Philadelphia (in roughly 133,000 households). The figures from the survey help build an estimate of the number of residents lacking a wireline broadband internet subscription at home, a desktop or laptop computer, or any computing device appropriate for schoolwork (i.e., a desktop, laptop, or tablet computer).

- **Broadband**: 12,000 households, or 23,000 K-12 students lack a wireline subscription at home.
- **Desktop or laptop computers**: 20,000 households, or 38,000 students, have neither a desktop, nor a laptop.
- **Any computing device** appropriate for school: 11,000 K-12 households, or roughly 20,000 students, lack a desktop, laptop, or tablet computer.

The number of K-12 households without broadband subscriptions in 2021 is significantly lower than in 2019, using data from the ACS as a point of comparison. In 2019, ACS showed that 79% of households with children between the ages of 6 and 17 had home broadband subscriptions (28,000 K-12 households in the city did not have broadband in 2019). In other words, the number of K-12 households without broadband subscriptions fell from 28,000 to 12,000 between 2019 and 2021.

Table 4: Digital tool adoption in K-12 households by race and ethnicity

	White	Black	Hispanic
A high-speed, broadband internet service installed in your household*	93%	90%	89%
A working desktop or laptop computer†	89%	88%	76%
A working tablet computer‡	79%	73%	60%
A Desktop or Laptop OR Tablet	95%	93%	86%

Note:

*such as Comcast XFinity, Verizon FiOS, or DSL service

†including a Chromebook

‡such as an iPad, Samsung Galaxy Tab, or Amazon Fire

IV. The pandemic's economic disruption caused many low-income Philadelphians to lose internet service and revealed that large numbers of Philadelphia households are "subscription vulnerable"

One purpose of the survey was to explore how households dealt with economic challenges and maintained home internet service during the pandemic. As the Pew Research Center has found, 25% of Americans reported having trouble paying bills during the pandemic, a figure that rose to 46% for low-income households. A recent Pew survey shows that worries about paying for service have endured; 26% of a national sample say they worry "a lot" or "somewhat" about paying for their high-speed internet connection over the next few months. The Philadelphia survey finds that 15% of Philadelphia households experienced an interruption since the pandemic began because they had difficulty paying for service. This problem was acute for low-income and K-12 households. Specifically:

- 31% of low-income households (annual income of $20,000 or less) experienced a pandemic-related interruption in home internet service.
- 21% of K-12 households had service interrupted because the pandemic made paying the bill a challenge.

These data underscore the importance of discount programs for many households. The survey explored this further by asking whether respondents could maintain home service without discount programs. Among those who had signed up for a free or discount program, a strong majority (63%) said it would be difficult to keep service without the program (24% said it would be "very difficult" and 39% said it would be "somewhat difficult"). Some 78% of K-12 households that have signed up for a program say they would find it either "very difficult" or "somewhat difficult" to keep service. And 32% of K-12 households said it would be "very difficult" to keep service, and 46% said it would be "somewhat difficult" to keep service.

These data help describe a segment of Philadelphia households that we term "subscription vulnerable." This would include respondents who:

- Had a service interruption during the pandemic, or;
- Said it would "very" or "somewhat" difficult to keep service without a free or discounted internet plan, or;
- Are low-income (i.e., live in a household with annual income of $20,000 or less).

Collectively, that vulnerability affects 32% of all households in Philadelphia that have a home broadband subscription. Of note is that 39% of K-12 households fall into the "subscription vulnerable" group. This is understandable since K-12 households are more likely than others to rely on free or discounted internet service plans.

Subscription Vulnerable

Had a service interruption during the pandemic

Said it would be difficult to keep service without a free or discount internet plan

Are a low-income household

V. Many Philadelphians are unaware of discount programs for access or haven't had time to apply

Even though programs to help foster digital connectivity have had an impact, the survey highlighted a few issues that may limit their impact. One issue is awareness. For discount offers such as Comcast Internet Essentials, EBB, or PHLConnectED, a minority of respondents had heard of them.

Table 5: Awareness of discount programs in Philadelphia

	ALL	K-12
Discount or free internet offerings*	31%	40%
The federal government's Emergency Broadband Benefit†	13%	13%
The PHLConnectED program	8%	9%

Note:

*from a carrier such as Comcast Internet Essentials or T-Mobile's Project 10Million

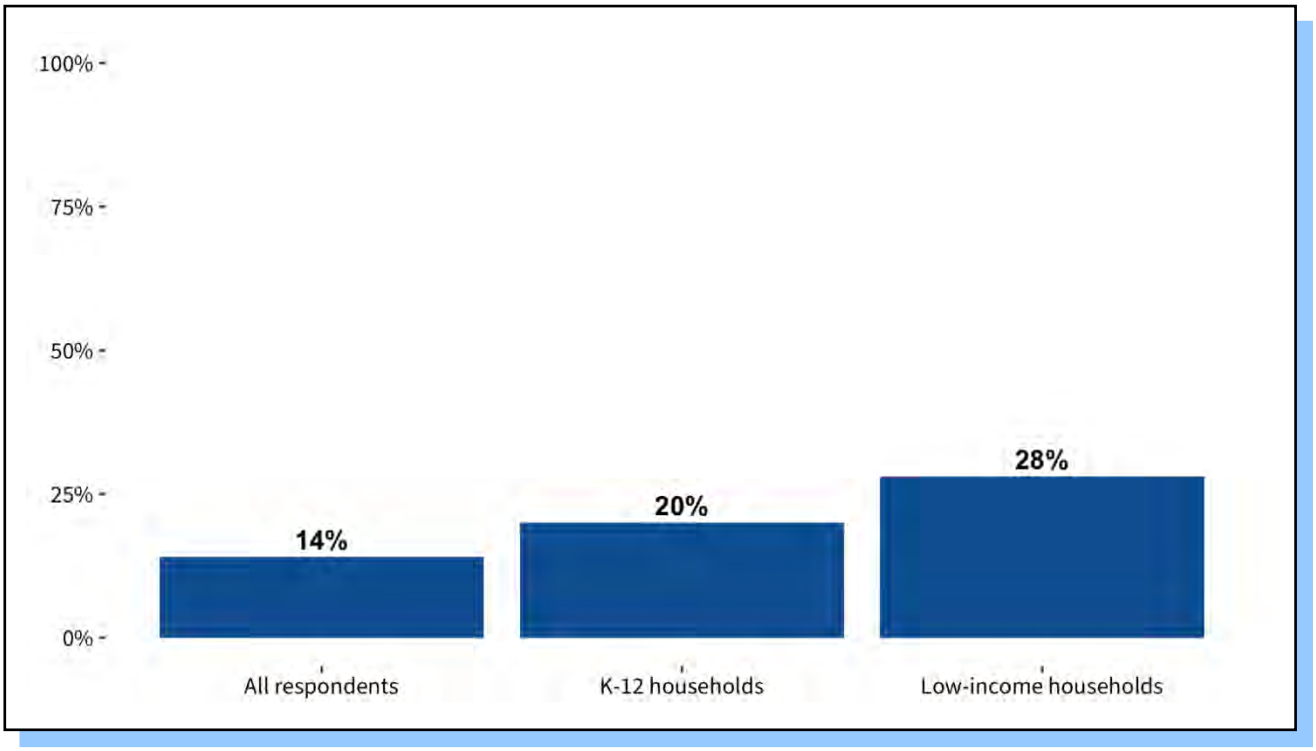
†EBB provides qualifying households a $50 per month discount on their internet bill

Overall, 38% of Philadelphia households have heard of one of these three initiatives. For those who do not have broadband at home, the numbers are very different. Just 24% of those without a broadband subscription at home have heard of any of these initiatives.

Households with K-12 students were more likely (40%) to have heard of offers such as Comcast Internet Essentials. African American households were also a bit more likely (35%) to be aware of discount or free offers.

Among those who had heard of any of these three initiatives, 14% successfully signed up for service. This figure includes 20% of K-12 households and 28% of low-income households.

Among those who had heard of an internet discount offer, how many successfully signed up?



Of equal interest is the fact that 85% of households did not sign up for any offers. Many who did not subscribe using these offers either did not need the discount or did not qualify for it. A plurality (36%) of all Philadelphia households said they did not qualify, 13% said they had not found the time to apply, and 38% cited some other reason.

The groups of most interest in this survey are K-12 households and low-income households. Many K-12 households did not apply because they said they did not qualify: 24%.

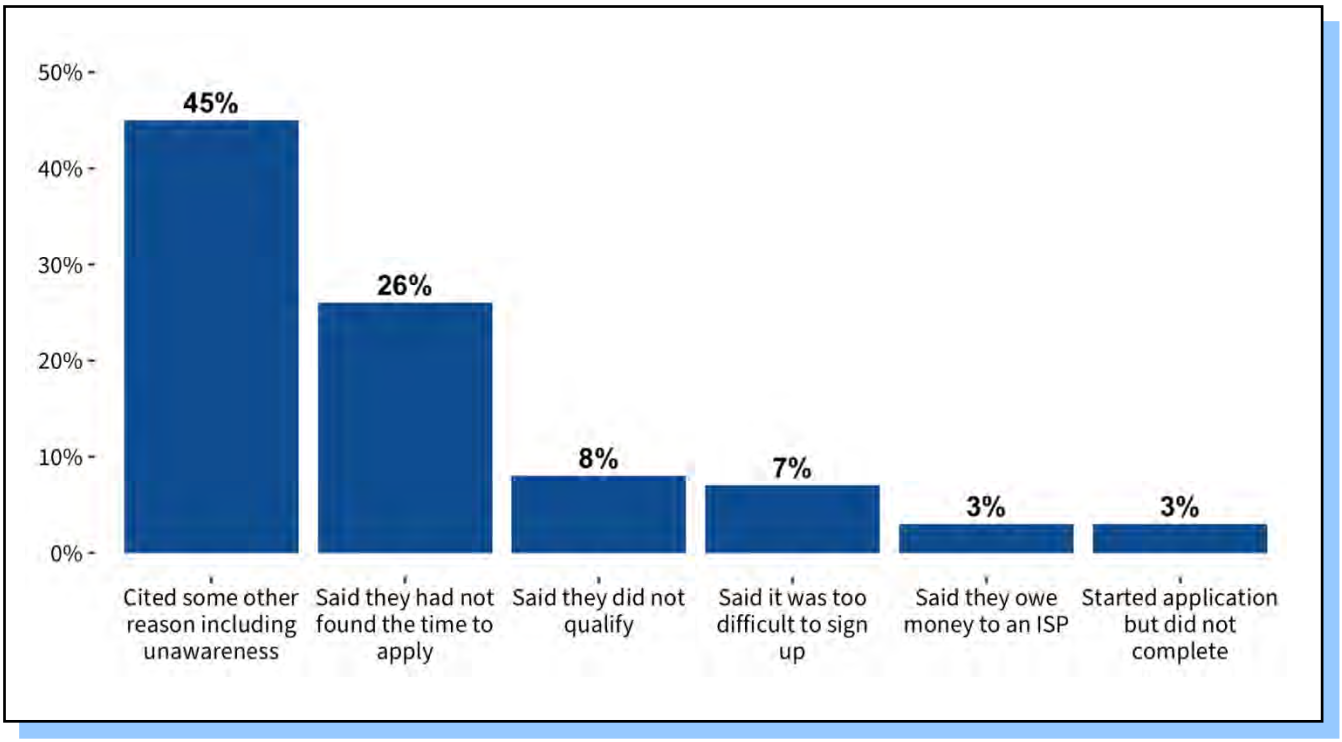
Table 6: Challenges in applying for discount broadband programs

	ALL	K-12	Income <$20K
You started applying but did not complete the application	2%	2%	3%
Your household did not qualify	36%	24%	8%
It was too difficult to sign up	4%	3%	7%
You owe money to an internet service provider	2%	2%	3%
You have not had the time to apply	13%	19%	26%
Some other reason	38%	45%	45%
Don't know/refused	4%	6%	9%

For low-income households (all of which likely qualify for free or discount offers), the responses shed a bit more light on the workings of these programs. Some 26% say they did not have the time to apply. Although everyone's time is scarce, time crunches can take on a special character for low-income households, as they often do not have the resources (e.g., transportation or internet access) that can save time.

Another 45% of respondents who did not apply for free or discounted service cited "some other reason." The survey asked respondents to identify that other reason, and interviewers recorded what they said. Although many responses were not easy to classify, many (29%) said they did not know enough about the offers. And 22% said they did not really need the program. These results suggest that some respondents, even when offered the chance to choose "I didn't qualify" or "it was too difficult to sign up," may not want to state that, initially at least. Even if the "some other reason" results do not provide precise numbers, they indicate that significant numbers of those who did not sign up had difficulty determining whether they qualified.

70% of low-income households - nearly all of which would likely qualify for discount programs - have not applied to a discount internet program. When low-income respondents were asked why they have not signed up:



These results are curious. Low-income respondents said they had heard about discount programs, but either lacked time to sign up, had not learned enough about the offers' details to apply, or did not think they needed it. The application process was a barrier for just a few; only 10% either did not complete the application or said it was too difficult.

Why are low-income households in Philadelphia passing on low-cost internet offers, especially in the face of a pandemic? The data offer no clear answer, but the findings indicate that outreach from trusted institutions, such as local public libraries, might help some households pursue discount internet offers.

Even with disruptions in service and new online burdens that come with taking classes online or working from home, 84% of Philadelphia residents were “very” or “somewhat” satisfied with the quality of their home internet connections during the pandemic. When asked to assess their levels of satisfaction with their home internet service for attending classes or doing their jobs online:

- 47% were “very satisfied” with their service
- 37% were “somewhat satisfied”
- 8% were “not too satisfied”
- 3% were “not at all satisfied”
- 4% had not used the internet for work or classes.

Low-income households were not as satisfied with their service, as 39% said they were “very satisfied” with their home internet connection and 37% were “somewhat satisfied.”

VI. Adoption gaps and reasons for forgoing high-speed internet service at home reveal unequal outcomes

Although 84% of Philadelphia households have broadband internet subscriptions at home, a number of demographic groups exhibit significant shortfalls from the city-wide norm. The groups whose broadband adoption figures are below average follow familiar patterns pertaining to race and ethnicity, income, and age. For questions on ethnicity, respondents were asked whether they were of Hispanic, Latino, or Spanish origin. For race, respondents were asked to select as many racial categories as apply from a list that has White or Caucasian, Black or African American, Asian or Asian American, Native American/American Indian/Alaska Native, or Pacific Islander/Native Hawaiian.

For race and ethnicity, the survey shows gaps between White and Black respondents and a larger gap when looking at Hispanic respondents. The gaps for Black and Hispanic adults would be somewhat larger without discount offers since, as noted above, both groups were more likely than other Philadelphians to take advantage of them. Gaps in computer ownership are greater, with Hispanic households showing the lowest rate of computer ownership.

Table 7: Digital tool adoption in Philadelphia by race and ethnicity

	All	White	Black	Hispanic
A high-speed, broadband internet service installed in your household*	84%	88%	82%	77%
A working desktop or laptop computer†	75%	82%	70%	63%
A working tablet computer‡	58%	59%	60%	43%
Desktop or Laptop OR Tablet	81%	86%	78%	71%

Notably, the Philadelphia survey gave respondents the option of taking the survey in a number of languages, including Spanish, Russian, Mandarin, Vietnamese, and Arabic. Overall, 110 interviews were conducted in Spanish and 35 were conducted in all the other languages. Given the number of Spanish interviews, it is possible to compare broadband and computer adoption for Hispanic residents who took the survey in Spanish and those who did so in English. That comparison shows large gaps between Hispanic Spanish speakers and others who identify as Hispanic in Philadelphia.

Table 8: Digital tool adoption for Hispanic Spanish speakers in Philadelphia

	All Hispanic	Interview in Spanish	Hispanic, Interview in English
A high-speed, broadband internet service installed in your household*	77%	67%	83%
A working desktop or laptop computer†	63%	45%	73%
A working tablet computer‡	43%	34%	48%
Desktop or Laptop OR Tablet	71%	58%	78%

Age is another important dividing line when it comes to technology adoption. Nearly half (47%) of those without broadband at home in the city are 65 and older. Those over the age of 65 in Philadelphia (about 18% of the population) are much less likely to have a wireline broadband connection at home or a computer.

The other striking issue for older adults is use of programs for discount internet offers. Only 5% of those over the age of 65 have signed up for programs such as Comcast Internet Essentials or PHLConnectED. That stands in stark contrast to K-12 households, where 21% have taken advantage of these initiatives. Just 27% of older adults have heard of any of the free or discount programs, compared with 40% of all other respondents.

Table 9: Digital tool adoption by age

	18-24	25-34	35-44	45-54	55-64	65+
A high-speed, broadband internet service installed in your household*	90%	91%	92%	86%	81%	67%
A working desktop or laptop computer†	87%	86%	86%	77%	70%	48%
A working tablet computer‡	58%	63%	72%	61%	53%	40%
Desktop or Laptop OR Tablet	89%	91%	91%	83%	75%	59%

Income is the other clear marker when looking at the adoption of broadband and other digital tools. For Philadelphia residents with the lowest incomes, whose annual incomes are $20,000 or less, the gaps are most acute. This group, which makes up 23% of the survey's sample, is less likely to have a broadband subscription at home by 12 percentage points. This group's home broadband subscription rate of 71% would be 17 percentage points lower without free or discount offers.

Table 10: Digital tool adoption by annual household income

	<$20K	$20K - $30K	$30K - $40K	$40K - $50K	$50K - $75K	$75K - $100K	>$100K
A high-speed, broadband internet service installed in your household*	71%	83%	85%	93%	91%	95%	98%
A working desktop or laptop computer†	53%	73%	78%	81%	89%	93%	96%
A working tablet computer‡	39%	56%	59%	54%	68%	78%	78%
Desktop or Laptop OR Tablet	63%	79%	83%	89%	92%	96%	98%

Low-income residents also have lower rates of computer ownership. Just more than half (53%) have a desktop or laptop computer and 4 in 10 have a tablet. More than one-third (37%) have neither a computer (desktop or laptop), nor a tablet device.

Respondents' level of educational attainment is another important element in explaining different levels of adoption of computers and the internet. For those who said their education did not extend to obtaining a high school degree, home broadband adoption is lower than for those with at least a high school degree, and much lower than for those who graduated from

college. These respondents also are less likely to have computing devices at home. This group makes up 9% of the survey's sample of Philadelphians, but they experience large digital deficits. For the larger group of Philadelphia residents with lower levels of educational attainment (the 46% of those with a high school degree or less) only 76% have broadband and 60% have a desktop or laptop computer.

Table 11: Digital tool adoption by levels of educational attainment

	Less than high school degree	High school degree	Some college	College degree or more
A high-speed, broadband internet service installed in your household*	64%	78%	87%	96%
A working desktop or laptop computer†	42%	64%	80%	94%
A working tablet computer‡	35%	51%	64%	70%
Desktop or Laptop OR Tablet	53%	73%	87%	96%

a. Reasons people do not subscribe to broadband

The other side of the "low connectivity" coin are households with no home broadband subscription. Respondents were asked to choose from a list of nine reasons they do not have high-speed broadband internet at home. A follow-up question then asked them to identify the main reason they did not have service.

Table 12: Reasons Philadelphians do not subscribe to broadband

	List as a reason	Rank as most important reason
The monthly cost of a home broadband subscription is too expensive	56%	27%
The cost of a computer is too expensive	50%	12%
Your smartphone lets you do everything online that you need to do	49%	22%
You do not want or need high-speed internet service at home.	43%	14%
You worry about the privacy and security of your personal data	41%	7%
You are not comfortable using a computer or the internet	31%	5%
You have other options for internet access outside of your home	28%	4%
You can't get broadband service installed at your residence	13%	1%
You have past-due bills to internet service providers	10%	3%
Some other reason I haven't already mentioned	14%	NA

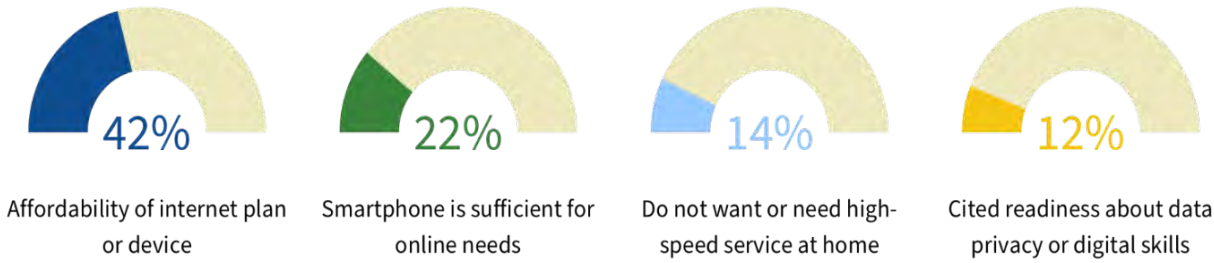
The table reveals that non-broadband users have multiple reasons for not having service. The typical respondent cites three reasons from the list of nine, with affordability, worries about online hazards, digital skills, and worries about whether they really need service figuring prominently.

When pressed to specify the most important reason for not having service, clear patterns emerge.

- **Affordability**: 42% cite something having to do with the cost of having service, such as the monthly service fee (27%), cost of a computer (12%), or past-due bills (3%).

- **Smartphones**: Some one in five (22%) say that the smartphone is sufficient for their online needs. This group of non-broadband subscribers are more likely than others to say they have options for internet access outside the home.
- **Not interested in service**: 14% who say they do not want or need high-speed service.
- **Digital readiness**: This category, totaling 12%, encompasses skills (5% who are not comfortable using a computer) and security (7% who worry about the privacy and security of their personal data).

When asked to identify the most important reason they do not have high-speed internet service at home



Among current non-broadband subscribers in Philadelphia, 30% had service at one time. For this group, affordability barriers are most acute, with 53% citing affordability as the main reason they do not have service (39% point to the monthly service fee, 10% to computer cost, and 4% have past due internet bills). For the 69% of non-subscribers who have *never* had service at home—and are presumably the most difficult to lure to having service—cost is the chief barrier, although not wanting or needing service plays a significant role. For this group, 36% cite cost as the main reason (22% say it's the monthly fee, 14% say they cannot afford a computer, and 2% have past bills due). Some 20% of those who have never had service say they "do not want or need high-speed internet service at home" is the most important reason they do without. Age is a factor here; 42% of those who have never had service are age 65 or older, while 25% of those who have had service in the past are 65 or older.

Demographically, those without broadband service at home are older and have lower incomes than broadband subscribers. Some 70% of those without broadband service at home are age 55 or older (47% are 65 or older) and 55% have household incomes of $30,000 or less. By contrast, 28% of broadband subscribers are age 55 or older and 30% have annual household incomes of $30,000 or less. Educational attainment is another factor. Among non-broadband subscribers, 75% have a high school degree or less; the comparable figure for broadband subscribers in Philadelphia is 41%.

b. A close look at affordability thresholds

The survey also asked respondents their views on what level of monthly internet fee would fit their monthly budget. Some 5% of residents said $0 to $10 would be too expensive and another 4% said a monthly internet bill between $11 and $20 would be too expensive. The rest, as Table 13 shows, cited a figure above $20 per month. This means that 90% of Philadelphia households consider a monthly internet bill above $20 too expensive. Nearly three-quarters (73%) said a monthly bill over $50 would be too expensive. Since most internet service plans for high-speed service start at about $50, one way to interpret the results is to observe that many households wish that their internet service was less expensive, and some find the bill out of their financial comfort range.

90% of Philadelphia households consider a monthly internet bill above $20 too expensive.

Table 13: Monthly price ranges that respondents say are too expensive

	All
$0 to $10	5%
$11 to $20	4%
$21 to $50	14%
$51 to $75	21%
Greater than $75	52%
Don't know/refused	4%

A look at specific categories of respondents underscores how the $20 threshold seems to be an inflection point. For those who have signed up for a free or discounted service plan (9% of respondents), one-quarter cite $21-$50 as too expensive, with low-income and K-12 households citing that figure to a somewhat smaller degree. For the toughest to reach non-subscribers (those who have never had high-speed service at home), 28% say a service plan under $20 per month is too expensive. This is much greater than the figure for those who have signed up for discount offers (13%) and three times what K-12 households say.

Table 14: Monthly price ranges that respondents say are too expensive (by group)

	Signed up for discounts	Income < $20K	K-12	Never have had broadband at home
$0 to $10	6%	12%	4%	15%
$11 to $20	7%	9%	4%	13%
$21 to $50	25%	21%	18%	15%
$51 to $75	20%	19%	20%	10%
Greater than $75	41%	35%	51%	31%
Don't know/refused	2%	3%	3%	15%

Perhaps the most important takeaway from this analysis is that affordability thresholds vary depending on the type of non-broadband subscriber. Most low-income households (almost 90%) could pay $10 for service, but beyond that, affordability seems to be a problem. Putting it differently and focusing on low-income respondents, a program that asked subscribers to pay $10 for service would be an issue for 12% of low-income households (and just 4% of K-12 households).

Another key point is that saying that service is too expensive for one's household budget does not necessarily mean service is out of reach. Many low-income households do not use discount programs for service but subscribe to broadband anyway. Yet, about 80% say a fee over $20 per month is too expensive. An implication is that, for some of these households, affordability of service is not limited to the threshold that would mean they forgo service, but a threshold that requires them to weigh broadband service against other household expenses.

Appendix A: Survey Demographics

Demographics: Philadelphia survey

	Do NOT have home broadband	At-home broadband users
Gender		
Male	47%	46%
Female	53%	53%
Other	NA	1%
Age		
18-24	4%	11%
25-34	5%	27%
35-44	6%	18%
45-54	9%	15%
55-64	23%	14%
65+	47%	14%
Average	6%	1%
K-12 person(s) at home		
Yes	17%	33%
Education		
Less than high school	21%	7%
High school graduate	53%	34%
Some college (includes community college)	14%	24%
College degree or more	11%	34%

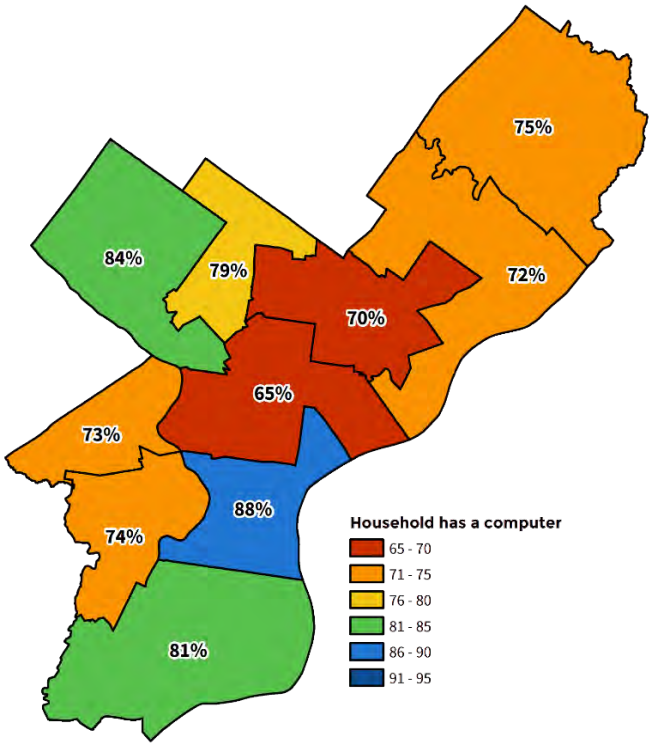
*Table continued on next page

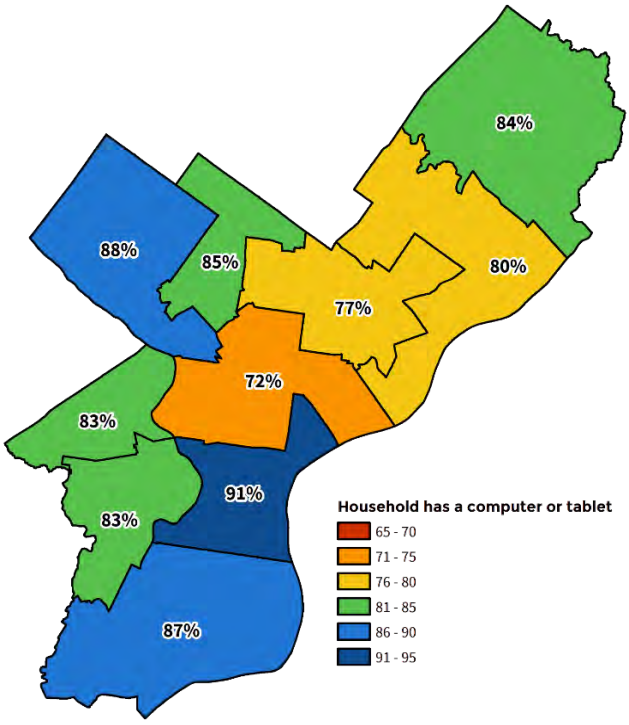
	Do NOT have home broadband	At-home broadband users
Race/ethnicity		
White	29%	38%
Black	43%	37%
Hispanic	19%	12%
Asian	2%	3%
Other/Mixed Race	6%	8%
Income		
Less than $10,000	21%	8%
10 to under $20,000	21%	11%
20 to under $30,000	13%	11%
30 to under $40,000	9%	10%
40 to under $50,000	3%	8%
50 to under $75,000	6%	12%
75 to under $100,000	3%	9%
100 or more - 1%	2%	10%
Don't know/Refused	23%	13%
Number of cases	373	2130

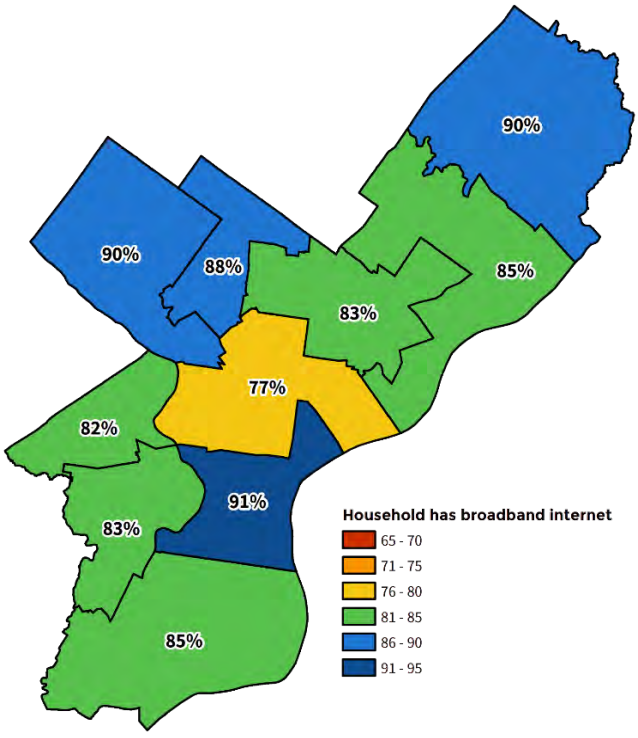
* 2019 ACS data

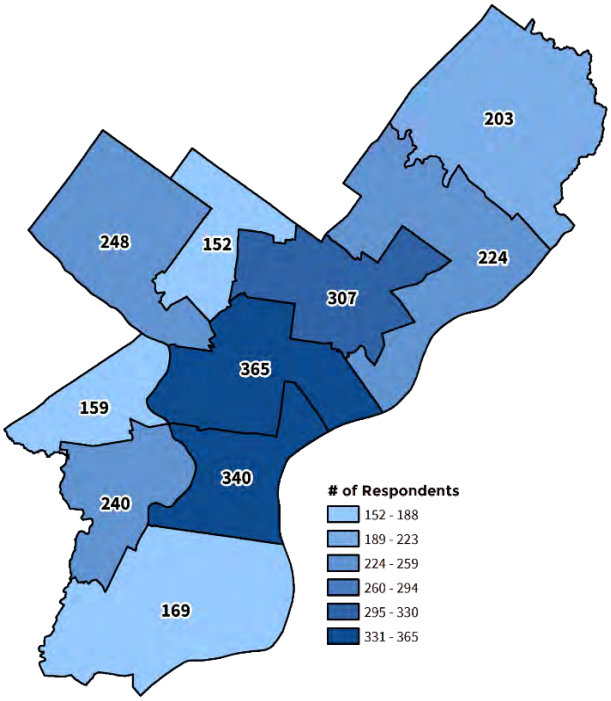
† 2021 Telephone Survey data

Digital tool adoption by Philadelphia neighborhoods









Appendix B: Survey Methodology

The 2021 Philadelphia Household Internet Assessment Survey was conducted on behalf of the City of Philadelphia and the Mayor's Fund for Philadelphia by SSRS, Inc. The purpose of this research was to gain an updated understanding of the number of households in Philadelphia that are currently without internet or are relying on unstable, low bandwidth options, as a way to benchmark progress by the City and its partners to close the digital divide. The primary contractor for this study was Wilco Electronic Systems, Inc. Wilco partnered with Centri Tech and Centri Tech Foundation and broadband expert Dr. John Horrigan to develop the survey instrument and provide analysis to inform policy, program, and budget decisions for the City's digital equity strategy. SSRS provided data collection services for the survey.

The June-July 2021 Philadelphia Household Internet Assessment Survey obtained telephone interviews with a representative sample of 2,503 adults, 18 or older, who reside in Philadelphia, Pennsylvania. Telephone interviews were conducted by landline (633) and cell phone (1,870). Interviews were conducted in English, Spanish, Arabic, Mandarin, Russian, and Vietnamese from June 15-July 15, 2021. Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ± 2.4 percentage points.

Appendix C: Survey Questionnaire

Internet Connectivity in Philadelphia
Final Questionnaire

Interviewing dates: June 15-July 15, 2021
Interview language(s): English, Spanish, Arabic, Mandarin, Russian, Vietnamese

(READ TO ALL)

INTRO. Hello, my name is ____ and I'm calling on behalf of the City of Philadelphia from SSRS. We're conducting an important survey, and we would like to include your household. (INSERT IF CELL PHONE SAMPLE: I know I am calling you on a cell phone. If you would like to be reimbursed for your cell phone minutes, we will pay eligible respondents $X for participating in this survey.)

This call may be monitored or recorded for quality assurance.

(READ IF NECESSARY: We're not selling anything; We're just doing an opinion poll on interesting subjects for research purposes only.)

(READ IF NECESSARY: I am calling from SSRS, a national research firm, on behalf of the City of Philadelphia.)

(READ IF NECESSARY: You may have heard or read about this survey in the local news.)

VOICEMAIL MESSAGE:

Hello, I'm calling from SSRS on behalf of the City of Philadelphia. We're conducting an important survey. This is **not** a sales call. We will try to reach you again.

(ASK IF LANDLINE SAMPLE)

S1. To randomly select an adult in your household, may I please speak with the person, **age 18 or older**, who has the **next birthday** and is at home now?

(READ IF NECESSARY: Your phone number has been randomly selected to complete the survey. We are not selling anything.)

1 Continue with respondent already on phone

2 New respondent being brought to phone

3 No adult currently at home

9 (DO NOT READ) Refused

[PN: IF S1=1, CONTINUE]

[PN: IF S1=2, RE-READ INTRO AND THEN CONTINUE]

[PN: IF S1=3, GET NAME AND SET FOR CALLBACK]

[PN: IF S1=9, THANK AND TERMINATE]

[PN: S1 TERMINATION TEXT: Thank you very much for your time. Have a good rest of your day.]

(READ TO ALL:) First, just a few background questions...

(ASK IF CELL PHONE SAMPLE)

CPAGE. What is your age?

___ years [RANGE 0-97, 97=97 or older]

98 (DO NOT READ) Don't know

99 (DO NOT READ) Refused

(ASK IF CPAGE=98-99; IF DK/REFUSED AGE)

CPAGEREF. Keeping in mind that this is a completely confidential survey... Could you please tell us if you are: (READ LIST)

0 Under 18

1 18 to 24

2 25 to 34

3 35 to 44

4 45 to 54

5 55 to 64

6 Or 65 or older

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

[PN: IF CPAGE=18-97 OR CPAGEREF=1-6, CONTINUE]

[PN: IF CPAGE=0-17 OR CPAGEREF=0,8,9, THANK & TERMINATE]

[PN: CPAGE/CPAGEREF TERMINATION TEXT: This survey is limited to adults age 18 and over. Have a good rest of your day.]

(ASK IF CELL PHONE SAMPLE)

S4. Are you now driving a car or doing any activity requiring your full attention?

1 Yes, driving

2 No, not driving

9 (DO NOT READ) Don't know/Refused

[PN: IF S4=1, GET NAME AND SET FOR CALLBACK)]

[PN: IF S4=2, CONTINUE]

[PN: IF S4=9, THANK AND TERMINATE]

[PN: S4 TERMINATION TEXT: Thank you for your time. Have a good rest of your day.]

(ASK ALL)

RSTATE. Just to confirm... What state do you currently live in?

(IF R SAYS "PENNSYLVANIA", ENTER CODE 1)

(IF R SAYS A STATE OTHER THAN PENNSYLVANIA, ENTER CODE 2)

1 Pennsylvania

2 Other state

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

[PN: IF RSTATE=1, CONTINUE]

[PN: IF RSTATE=2-9, THANK & TERMINATE]

[PN: RSTATE TERMINATION TEXT: Thank you very much for your time. We are only talking to those who currently live in Pennsylvania. Have a good rest of your day.]

(ASK ALL)

RCOUNTY. And in what county do you live?

[**IF DK/REFUSED OR IF NECESSARY, PROBE ONCE**: "This question helps us to accurately determine what part of the state people who complete the survey live in and is used only for classification purposes. You cannot be contacted based on this information."]
(IF R SAYS "PHILADELPHIA", ENTER CODE 1)

(IF R SAYS A COUNTY OTHER THAN PHILADELPHIA, ENTER CODE 2)

1 Philadelphia

2 Other county

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

[PN: IF RCOUNTY=1, CONTINUE]

[PN: IF RCOUNTY=2-9, THANK & TERMINATE]

[PN: RCOUNTY TERMINATION TEXT: Thank you very much for your time. We are only talking to those who currently live in Philadelphia. Have a good rest of your day.]

(ASK ALL)

SEX. [DO NOT ASK] RECORD RESPONDENT'S SEX

1 Male

2 Female

BROADBAND AT HOME AND DEVICES IN THE HOUSEHOLD

(ASK ALL)

(PN: ITEMS ASKED IN ORDER; DO NOT RANDOMIZE)

BBHOME. Do you or any member of your household have access to the internet using (INSERT ITEM)?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

a. A cellular data plan for a smartphone or other mobile device

b. A high-speed, broadband internet service such as Comcast XFinity, Verizon FiOS, or DSL service installed in your household

c. A satellite Internet service installed in your household

NO ITEM D

e. A dial-up Internet service installed in your household

NO QUESTION 1

(ASK ALL)

(PN: ITEMS ASKED IN ORDER; DO NOT RANDOMIZE)

(PN: SHOW INTERVIEWER "READ IF NECESSARY" FOR ITEM B ONLY)

Q2. Please tell me if anyone in your household happens to have each of the following items, or not. Do you or any member of your household have (INSERT ITEM)?

(PN: SHOW FOR ITEM B ONLY:)

(READ IF NECESSARY: "This includes netbooks.")

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

a. A smartphone, such as an iPhone, Android, Blackberry, or Windows phone

b. A working desktop or laptop computer, including a Chromebook

c. A working tablet computer like an iPad, Samsung Galaxy Tab, or Amazon Fire

HOUSEHOLD MAKE-UP AND PRESENCE OF STUDENTS

NO QUESTION 3

(ASK ALL)

Q4. How many people, **age 18 or YOUNGER**, presently live in your household?

0 0/None

1 1

2 2

3 3

4 4

5 5

6 6

7 7

8 8

9 9

10 10 or more

98 (DO NOT READ) Don't know

99 (DO NOT READ) Refused

(ASK IF Q4=1-10 - Respondents whose household has people age 18 or younger)

Q5. Are any of these people between the ages of 5 and 18?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

NO QUESTION 6

(ASK IF Q4=1-10 - Respondents whose household has people age 18 or younger)

Q7. Since the pandemic began, has your household participated in any programs that provide your household with computers for schoolwork?

(IF YES, PROBE: "Was it through a program through your children's schools, through some other type of program, or both?)

(INTERVIEWER NOTE: IF R HAS MULTIPLE CHILDREN IN DIFFERENT SCHOOLS AND ANY OF THOSE SCHOOLS OFFERED THIS TYPE OF PROGRAM, CODE AS 1-YES FROM CHILD'S SCHOOL OR 3-YES BOTH, AFTER PROBING)

1 Yes, from my child's school

2 Yes, from a program not offered through my child's school

3 Yes, both from my child's school and from a program not offered through my child's school

4 No

5 (DO NOT READ) Program not offered

6 (DO NOT READ) Child/Children are homeschooled

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF Q4=1-10 - Respondents whose household has people age 18 or younger)

Q8. Since the pandemic began, has your household participated in any programs that provide internet access at your home for schoolwork?

(IF YES, PROBE: "Was it through a program through your children's schools, through some other type of program, or both?)

(INTERVIEWER NOTE: IF R HAS MULTIPLE CHILDREN IN DIFFERENT SCHOOLS AND ANY OF THOSE SCHOOLS OFFERED THIS TYPE OF PROGRAM, CODE AS 1-YES FROM CHILD'S SCHOOL OR 3-YES BOTH, AFTER PROBING)

1 Yes, from my child's school

2 Yes, from a program not offered through my child's school

3 Yes, both from my child's school and from a program not offered through my child's school

4 No

5 (DO NOT READ) Program not offered

6 (DO NOT READ) Child/Children are homeschooled

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

HOUSEHOLD INTERNET CONNECTIVITY SINCE THE PANDEMIC

(ASK IF BBHOMEb=1 or BBHOMEc=1 - Respondents who have internet access through home broadband or home satellite service)

Q9. Since the pandemic began, has your household experienced interruption in home internet service due to difficulties in paying for service?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

PROGRAMS TO HELP PEOPLE STAY ONLINE

(ASK ALL)

(PN: RANDOMIZE ITEMS; INCLUDE RANDOMIZATION IN DATA FILE)

Q10. Since the pandemic began, there have been a number of initiatives to make it easier for households to purchase or maintain their home internet service. Please tell me whether you have heard of any of the following.

(First,) have you heard about (INSERT ITEM)?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

a. The PHLConnectED program (PRONO: P–H–L Connected Program)

b. Discount or free internet offerings, such as those offered by carriers such as Comcast's Internet Essentials or T-Mobile's Project 10 Million

c. The federal government's Emergency Broadband Benefit, which provides qualifying households a $50 per month discount on their internet bill

(ASK IF Q10A=1 or Q10B=1 or Q10C=1 - Respondents who have heard about PHLConnectED, Discount internet offerings, or the Emergency Broadband Benefit)

Q11. Has your household **successfully** signed up for a discount or free internet offer that is aimed at certain qualifying households, or not?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF Q11=1 - Respondents whose household signed up for a discount or free internet offer)

(PN: ROTATE RESPONSES 1-4/4-1; INCLUDE ROTATE IN DATA FILE)

Q12. How difficult, if at all, would it be for you to keep your internet service without the free or discounted internet service you signed up for?
(READ LIST)

1 Very difficult

2 Somewhat difficult

3 Not too difficult

4 Not at all difficult

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF Q11=2 - Respondents whose household has not signed up for a discount or free internet offer) (PN: RANDOMIZE OPTIONS 1-5; ACCEPT ONE RESPONSE ONLY; INCLUDE RANDOMIZATION IN DATA FILE)

Q12A. Was that **mainly** because:

(READ LIST)

1 You started applying but did not complete the application.

2 Your household did not qualify.

3 It was too difficult to sign up.

4 You owe money to an internet service provider.

5 You have not had the time to apply.

97 (DO NOT READ) Some other reason (SPECIFY)

98 (DO NOT READ) Don't know

99 (DO NOT READ) Refused

HOME INTERNET EXPERIENCE

(ASK IF BBHOMEb=1 or BBHOMEc=1 - Respondents who have internet access through home broadband or home satellite service)

(PN: ROTATE RESPONSES 1-4/4-1; INCLUDE ROTATE IN DATA FILE)

Q13. Since the pandemic began, how satisfied, if at all, have you been with the quality of your home internet connection for doing important online activities such as attending classes or doing your job? (READ LIST)

1 Very satisfied

2 Somewhat satisfied

3 Not too satisfied

4 Not at all satisfied

5 (DO NOT READ) Have not used the internet to do this

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

REASONS FOR NOT SUBSCRIBING TO BROADBAND

(ASK ALL EXCEPT BBHOMEb=1 - Respondents without wireline high-speed internet at home)

(PN: RANDOMIZE ITEMS; ITEM J ALWAYS LAST; INCLUDE RANDOMIZATION IN DATA FILE)

Q14. Please tell me whether any of the following are reasons why you do not have high-speed, broadband internet at home, such as cable, fiber optic, or DSL broadband internet at home.

First, (INSERT ITEM). Is this a reason why you do not have high-speed, broadband internet at home, or not?

Next, (INSERT NEXT ITEM) (READ IF NECESSARY: Is this a reason why you do not have high-speed, broadband internet at home, or not?)

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

a. The monthly cost of a home broadband subscription is too expensive.

b. The cost of a computer is too expensive.

c. Your smartphone lets you do everything online that you need to do.

d. You have other options for internet access outside of your home.

e. You can't get broadband service installed at your residence.

f. You worry about the privacy and security of your personal data.

g. You are not comfortable using a computer or the internet.

h. You do not want or need high-speed internet service at home.

i. You have past-due bills to internet service providers.

j. Some other reason I haven't already mentioned

(ASK IF 2+ YES RESPONSES (1) GIVEN IN Q14A-I)

(PN: SHOW ONLY THE RESPONSES SELECTED IN Q14A-I; RANDOMIZE OPTIONS IN SAME ORDER AS Q14A-I; INCLUDE RANDOMIZATION IN DATA FILE)

Q15. Thinking of the reasons why you do not have high-speed, broadband service at home, which ONE of them is the MOST important? (READ LIST IF NECESSARY)

1 The monthly cost of a home broadband subscription is too expensive.

2 The cost of a computer is too expensive.

3 Your smartphone lets you do everything online that you need to do.

4 You have other options for internet access outside of your home.

5 You can't get broadband service installed at your residence.

6 You worry about the privacy and security of your personal data.

7 You are not comfortable using a computer or the internet.

8 You do not want or need high-speed internet service at home.

9 You have past-due bills to internet service providers.

98 (DO NOT READ) Don't know

99 (DO NOT READ) Refused

(ASK ALL EXCEPT BBHOMEb=1 - Respondents without wireline high-speed internet at home)

Q16. Have you subscribed to high-speed, broadband internet service, such as cable, DSL, or fiber optic service, at home in the past, or not?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK ALL)

Q17. What monthly internet fee would you consider **too expensive** for your monthly budget? (READ LIST)

1 $0 to $10

2 $11 to $20

3 $21 to $50

4 $51 to $75

5 Greater than $75

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(READ TO ALL:) A few last questions for statistical purposes only...

(ASK ALL)

RSEX. I'm required to ask this question. Do you describe yourself as a man, a woman, or in some other way?

1 Man

2 Woman

3 Some other way

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF LANDLINE SAMPLE)

LLAGE. What is your age?

[INTERVIEWER NOTE: Enter '97' if respondent is 97 or older.]

___ years [RANGE 18-97, 97=97 or older]

98 (DO NOT READ) Don't know

99 (DO NOT READ) Refused

(ASK ALL)

HH1. How many adults, age 18 and over, currently live in your household, INCLUDING YOURSELF?

1 1

2 2

3 3

4 4

5 5

6 6 or more

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK ALL)

EDUC2. What is the highest level of school you have completed or the highest degree you have received?

(DO NOT READ RESPONSE OPTIONS)

[INTERVIEWER NOTE: Enter code 3-HS graduate if R completed vocational, business, technical, or training courses after high school that did NOT count toward an associate degree from a college, community college or university (e.g., training for a certificate or an apprenticeship)]

1 Less than high school (Grades 1-8 or no formal schooling)

2 High school incomplete (Grades 9-11 or Grade 12 with NO diploma)

3 High school graduate (Grade 12 with diploma or GED certificate)

4 Some college, no degree (includes some community college)

5 Two-year associate degree from a college or university

6 Four-year college or university degree/Bachelor's degree (e.g., BS, BA, AB)

7 Some postgraduate or professional schooling, no postgraduate degree

8 Postgraduate or professional degree, including master's, doctorate, medical or law degree (e.g., MA, MS, PhD, MD, JD)

98 Don't know

99 Refused

(ASK ALL)

HISP. Are you of Hispanic, Latino, or Spanish origin, such as Mexican, Puerto Rican, or Cuban?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK ALL)

(PN: ALLOW MULTIPLE RESPONSES; CODES 8 AND 9 ARE EXCLUSIVE)

RACE. Which of the following describes your race? You can select as many as apply. Are you: White, Black or African American, Asian or Asian American, or some other race?

[IF R SAYS THEY ARE MIXED OR BIRACIAL, PROBE: "What race or races is that?"]

[IF R SAYS HISPANIC OR LATINO, PROBE: "Do you consider yourself a WHITE (Hispanic/Latino) or a BLACK (Hispanic/Latino)?" IF R DOES NOT SAY WHITE, BLACK, OR ONE OF THE RACE CATEGORIES LISTED, RECORD AS "SOME OTHER RACE" (CODE 7)]

1 White or Caucasian

2 Black or African-American

3 Asian or Asian-American

4 Native American/American Indian/Alaska Native

5 Pacific Islander/Native Hawaiian

NO CODE 6

7 Some other race (SPECIFY)

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF HISP=1 - Hispanic respondents)

BIRTH_HISP. Were you born in the United States, on the island of Puerto Rico, or in another country?

1 U.S.

2 Puerto Rico

3 Another country

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK ALL)

INCOME. Last year, that is in 2020, what was your total family income from all sources, before taxes? Just stop me when I get to the right category.(READ LIST)

1 Less than $10,000

2 10 to under $20,000

3 20 to under $30,000

4 30 to under $40,000

5 40 to under $50,000

6 50 to under $75,000

7 75 to under $100,000

8 100 to under $150,000

9 $150,000 or more

98 (DO NOT READ) Don't know

99 (DO NOT READ) Refused

(ASK IF LANDLINE SAMPLE)

QL1. Now thinking about your telephone use... Do you have a working cell phone?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF LANDLINE SAMPLE WITH NO CELL PHONE/DK/REF (QL1=2-9))

QL1a. Does anyone else in your household have a working cell phone?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK IF CELL PHONE SAMPLE (BLANDCELL=1))

QC1. Now thinking about your telephone use... Is there at least one telephone INSIDE your home that is currently working and is not a cell phone?

1 Yes

2 No

8 (DO NOT READ) Don't know

9 (DO NOT READ) Refused

(ASK ALL)

RZIPCODE1. What is your zip code?

[**IF DK/REFUSED OR IF NECESSARY, YOU MUST PROBE ONCE**: This question helps us to accurately determine what part of the county people who complete the survey live in

and is used only for classification purposes. You cannot be contacted based on this information. Can you please tell me your zip code?]

_____ [ENTER EXACT 5-DIGIT ZIP CODE]

99998 (DO NOT READ) Don't know

99999 (DO NOT READ) Refused

(ASK IF GAVE ZIPCODE (RZIPCODE1<>99998,99999))

RZIPCODE2. Just to confirm – your zip code is [INSERT RZIPCODE1]. Is that correct?

1 Yes, correct

2 No, not correct

[PN: IF RZIPCODE2=1, CONTINUE]

[PN: IF RZIPCODE2=2, GO BACK TO RZIPCODE1]

THANK AND END INTERVIEW:

THANK YOU again for sharing your thoughts and opinions! Have a nice rest of the day.

Appendix D: Community Engagement Meeting

In May 2021, the research team invited community advocates and practitioners focused on addressing digital equity issues on behalf of residents of the City of Philadelphia to attend one of two, 90-minute, virtual feedback sessions. Participants were engaged from across multiple city stakeholder networks, including the Digital Literacy Alliance, the Charter School network, the School District of Philadelphia, the Technology Learning Collaborative's Planning Group, the Philadelphia Digital Navigator Network, as well as City of Philadelphia employees involved in the Digital Equity Coordinating Committee. The primary goal of these meetings was to provide a forum for expert stakeholders to provide input on the survey instrument that would be deployed to assess household internet adoption. Participants shared high-level feedback and pressure-tested survey questions, and their collective input was used to iterate the draft survey.

Community Stakeholder Meetings Attendee List

First Name	Last Name	Affiliation
Adrienne	Ewing	Mayor's Office for People with Disabilities
Ami	Irvin	Freire Charter School and TECH Freire Charter School
Andrea	Brooks	City of Philadelphia Department of Behavioral Health and Intellectual disAbility Services
Ashley	Pollard	City of Philadelphia Office of Innovation and Technology
Caitlin	Pratt	Philadelphia FIGHT Community Health Centers
Carl	Cristella	Philadelphia Academy Charter School
Christine	Piven	City of Philadelphia Office of Children and Families Adult Education
Cooper	Richardson	SEAMAAC
David	Moore	Free Library of Philadelphia
David	Rosario	Russell Byers Charter School
David	Peterson	Independence Charter School West
Ellen	Somekawa	Folk Arts-Cultural Treasures Charter School
Jessica	Begley	SOWN Supporting Older Adults and their Families
Joanne	Ferroni	Drexel University Office of University and Community Partnerships
Jonathan	Latko	Temple University Computer Recycling Center
Kellye	DeSantis	Comcast
Kerry	Porter	Alliance for Progress Charter School
Meagan	Pharis	Philadelphia Department of Public Health
Mica	Root	Philadelphia Department of Public Health
Phaedra	Tinder	City of Philadelphia Office of Innovation and Technology CityGeo Team
Robert	Murken	Comcast
Stephanie	Orlando	City of Philadelphia Office of Innovation and Technology
Steven	Doncaster	Free Library of Philadelphia
Susan	McAllister	Independence Charter School West
Thayne	Dibble	String Theory Schools

Appendix E: Research Team

Wilco Electronic Systems, Inc.

For over four decades, Wilco has been recognized as a unique and modern technology operator sitting at the epicenter of real estate, community, technology and impact. As a Philadelphia based organization, Wilco is at the forefront of providing affordable cable television, technology services and broadband to low-income, underserved communities and multifamily housing developments throughout the Greater Philadelphia Region.

Over the years, we have helped create several substantial private/public partnerships that have positioned our organization as a digital and broadband leader, specifically working on behalf of underserved and disadvantaged communities. After an acquisition of our cable division by Comcast, we have shifted our focus to providing low voltage wiring and design, integration of electronic security and IoT (Internet of Things) services, as well as intelligent building solutions with impact, for the multifamily residential, commercial, industrial and affordable housing real estate sectors. For more information, please visit www.wilcoinc.com.

Centri Tech and Centri Tech Foundation

Centri Tech and Centri Tech Foundation (CTF), along with a network of community development partners, seek to connect low-income Americans to high-quality connectivity in the home and digital workforce opportunities in the community. We believe digital advancement is a civil right. To achieve a sustainable future, one where everyone can fulfill their aspirations and thrive, requires an inclusive digital economy. To that end, we provide integrated solutions for connectivity and leverage investments in technology access and adoption to advance the standard of living and improve lives for all. Visit www.centri-tech.com and www.centritechfdn.org for more information.

John B. Horrigan, PhD

John B. Horrigan is Senior Fellow at the Benton Institute for Broadband and Society, with a focus on technology adoption and digital inclusion. Dr. Horrigan has also been a senior advisor to the Urban Libraries Council and a senior fellow to the Technology Policy Institute. Additionally, he has served as an Associate Director for Research at the Pew Research Center, where he focused on libraries and their impact on communities, as well as technology adoption patterns and open government data. During the Obama Administration, Dr. Horrigan served on the leadership team at the Federal Communications Commission for the development of the National Broadband Plan. Views expressed in this report are his own.

SSRS, Inc.

SSRS is a full-service survey research firm managed by a core of dedicated professionals with advanced degrees in the social sciences. Service offerings include the Omnibus Survey, SSRS Opinion Panel, and other Online Solutions, as well as custom research programs—all driven by a central commitment to methodological rigor. The SSRS team is renowned for its multimodal approach, as well as its sophisticated and proprietary sample designs. Typical projects for the company include complex strategic, tactical and public opinion initiatives in the U.S. and in more than 40 countries worldwide. SSRS is research, refined. Visit www.ssrs.com for more information.

ATTACHMENT B

AFFORDABILITY AND THE DIGITAL DIVIDE

by
A Reseach Partnership
between
EveryoneOn and Dr. John B. Horrigan

December 7, 2021

AFFORDABILITY AND THE DIGITAL DIVIDE

The First in a 3-Part Series on Digital Connectivity During the Pandemic

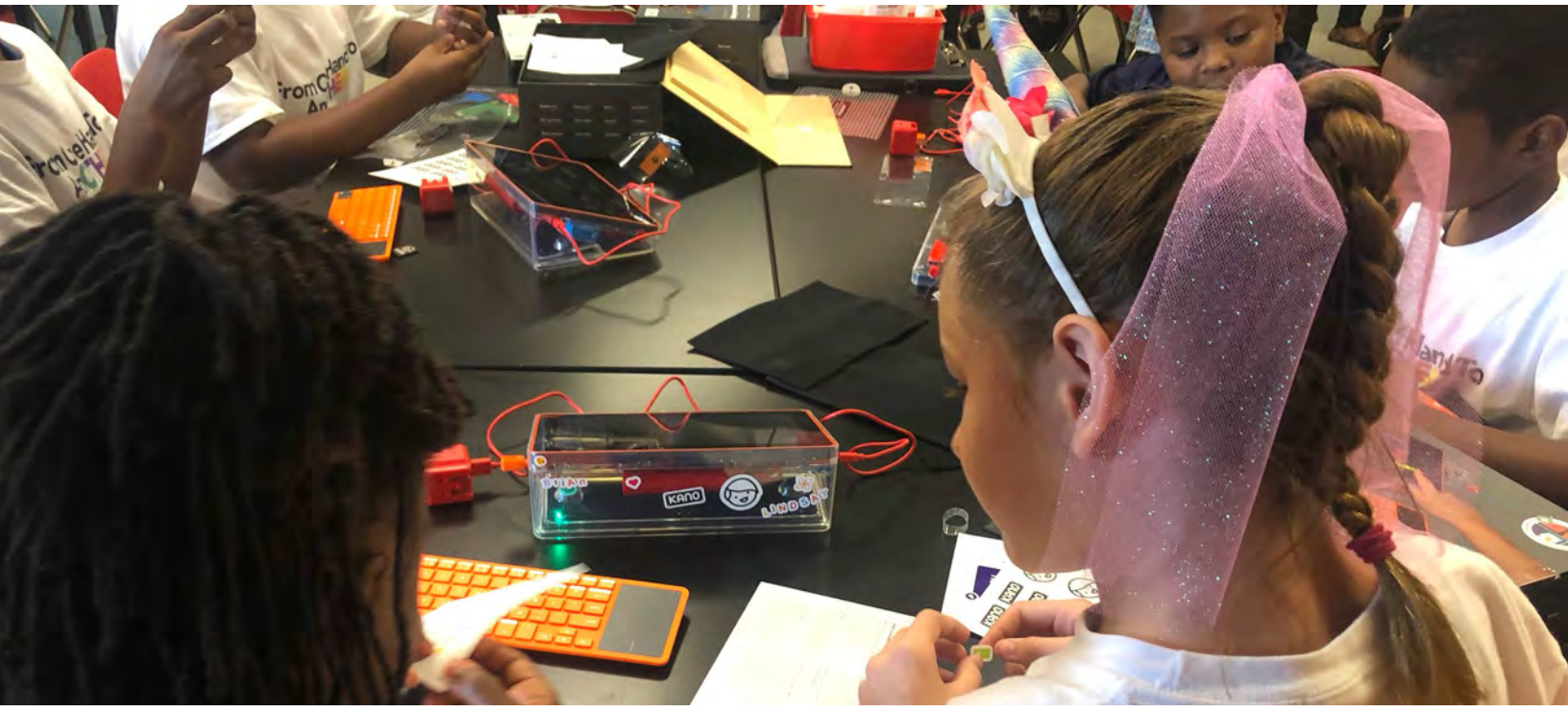
A National Survey of Low- and Lower-Middle Income Households

A research partnership between

everyoneon + John B. Horrigan, PhD

December 2021

Table of Contents



Finally! The digital divide, a social issue affecting millions of people across the country and deepening inequalities faced by income insecure populations, is receiving the attention it deserves. As a result, the government, corporations, philanthropy, internet service providers, and non-profit organizations are investing significantly in broadband infrastructure and digital inclusion initiatives to ensure everyone, regardless of zip code or income, has the opportunity to participate and thrive in our digital society and economy. The recent passage of the Infrastructure Investment and Jobs Act, for example, has allocated $65 billion dollars for broadband infrastructure and diverse digital inclusion activities. As policies and initiatives continue to take shape, data to understand and effectively address the consistent barriers to digital equity are increasingly important.

EveryoneOn is proud to present this report that shares findings from a national survey on internet connectivity and computer ownership among income insecure populations who are disproportionately affected by the digital divide. Given the fundamental challenges brought on by the COVID-19 pandemic, we embarked on this national research project alongside Dr. John B. Horrigan to understand how income insecure or low- and lower-middle income households (those with annual incomes of $50,000 or less) connected to the internet, obtained computers, and accessed tech and digital literacy resources and/or support during these extraordinary times. We were pleased to learn that 7 million households connected to high-speed internet via free or discounted offers, such as the Emergency Broadband Benefit. We also learned that, despite an increase of households connecting to the internet, computer and internet affordability and low digital literacy skills continue to be barriers to widespread adoption. This proves that, even with massive investments in broadband infrastructure, an equal increase in activities such as marketing, one-on-one enrollment support, and digital skills training led by trusted organizations will be essential components to help drive ubiquitous digital equity.

This report is the first of a three-part series that we hope will inform digital inclusion policies and initiatives nationally and locally, highlight the effectiveness of subsidized and discounted internet offers, and validate the need to equip trusted organizations with funding to drive internet adoption and implement digital skills training. The three-part series will cover the following themes:

EveryoneOn helps unlock social and economic opportunity by connecting families in underserved communities to affordable internet service and computers, and delivering digital skills trainings.

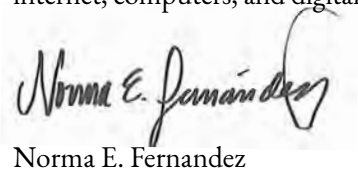
Report 1: Internet and Computer Affordability

Report 2 (January 2022 release): Digital Skills Trainings as Critical to Digital Inclusion

Report 3 (February 2022 release): Insights from Households Affected by the Digital Divide and the Organizations that Support Them

We invite the readers to remember that the data presented in these reports are not just numbers - they represent the experiences of people in our neighborhoods, cities, and maybe even our own family or friends. This is why we at EveryoneOn view the fundamental need for access to home internet, computers, and digital skills, as one of the most critical social justice issues of our time. Kids should not have to sit outside of a Taco Bell to access the internet and participate in remote learning; income insecure families shouldn't have to go into debt to afford high-speed internet service; and no one should miss out on the diverse and powerful opportunities the internet affords and digital skills facilitate.

As EveryoneOn prepares to celebrate its ten-year anniversary in 2022, we couldn't be prouder of the efforts and advancements that we and our diverse partners have made in fostering digital equity across the country and refining the meaning and scope of the digital divide, leading to and including the release of this report. We invite you to join us in helping to advance equity, inclusion, and opportunities for all by ensuring access to today's fundamental tools - the internet, computers, and digital skills.



Norma E. Fernandez
EveryoneOn CEO

ACKNOWLEDGEMENTS

Like all worthwhile efforts, it takes cross-sector collaboration to create meaningful change. EveryoneOn would like to express a special thanks to The Ballmer Group and Microsoft for funding this research project at such a critical time for our nation and investing in racial and economic equity efforts, including digital inclusion. We especially appreciate the thought partnership provided by Kevin Bromer and Korey Klien at The Ballmer Group and Vickie Robinson, Fatema Kothari, and Naria Santa Lucia at Microsoft.

We also extend our gratitude to Dr. John B. Horrigan who led the research activities, including the survey design and analysis, and shared his deep knowledge with EveryoneOn. Dr. Horrigan is a national expert on technology adoption, digital inclusion, and evaluating the outcomes and impacts of programs designed to promote communications technology adoption and use. Currently, he is a Senior Fellow at the Benton Institute for Broadband & Society.

SSRS, Inc. administered the national survey. We thank Jennifer Su for her excellent project management skills that ensured the effective deployment of the survey tools.

Lastly, thank you to the many digital inclusion practitioners and advocates, including EveryoneOn's dedicated board of directors and team members, who helped inform the process through their helpful insights. The digital inclusion sector has come a long way because of collective efforts and advocacy led by amazing people and organizations dedicated to digital equity.

SUMMARY OF FINDINGS

The COVID-19 pandemic raised awareness of the struggles that low-income households have in paying for basic needs. The Pew Research Center found that the pandemic-induced recession resulted in 46% of low-income households having trouble paying their bills compared with 19% of middle-income homes. The Center for Budget Policy & Priorities recently noted that 91% of families using the child tax credit, enacted to ease the pandemic's impact on families, spent funds on food, rent or mortgage, or utilities. Paying for home internet service has been no exception.

EveryoneOn's new national survey of households with annual incomes of $50,000 or less shows that nearly one in five (18%) lost connectivity during the pandemic because of difficulty paying their internet bills. A larger number – 49% – live near the precipice of disconnection. These are the "subscription vulnerable" who find the internet very difficult to fit their monthly service fee into their budgets and live at or near the poverty line.

Broadband bills are a strain for many

For these reasons, understanding affordability of internet service is crucial for developing solutions for the digital divide. This report focuses on affordability of internet service and the role it plays in adoption. Analysis of what low- and lower-middle income households pay for monthly internet services and their attitudes about whether this is a burden on their finances shows that:

- 40% say they cannot afford to pay anything for a home internet high-speed service subscription.
- 38% say they can pay something in the range of entry-level plans (or somewhat above), that is between $55 to $70 per month.
- 22% are comfortable paying about $25 per month.

Many of those who say they cannot afford any home broadband bill may be paying for smartphone plans and therefore not have the ability to pay for both. Others may have broadband at home, but may have to forego other goods to have broadband (and would prefer not to trade off groceries for internet service). Those able to pay modest sums for broadband may have more discretionary income and also have few options for low-cost service.

A final group has limited or no internet connectivity at home. Cost of service is the chief reason they do not have service, though many cite difficulty using computers and worries about privacy and security of their data. Some, who tend to be older adults and have very low incomes (i.e., those whose annual household incomes are below $25,000), say they do not want service. Their tepid attitudes about the necessity of having broadband go hand in hand with not having the means to pay for it.

Discounts have helped 7 million households

A bright spot is the presence of free or discount internet programs, such as those that some internet service providers offer or subsidies through the federal government's Emergency Broadband Benefit (EBB). Since the pandemic began, 9% of connected low- or lower-middle income households (i.e., those with either high-speed service at home, cellular

data plans, satellite subscriptions, or dial-up subscribers) have signed up for a free or discount plan for service. This comes to 7 million households whose annual incomes are $50,000 or under who have home high-speed service due to free or discount offers. K-12 and very low-income households are more likely to have signed up for these offers. Additionally, 26% of connected households have purchased a computer since the pandemic to better meet household computing needs.

Too few know about discount programs and too many have trouble enrolling

Further analysis of free and discount plans reveals two concerns:

1. A majority of low- and middle-income households are unaware of them. One-quarter (25%) said they had heard of free or discount internet offers and 23% said they had heard of the EBB. Together, this means that 37% had heard of one of them.

2. Many find them difficult to use. As to ease of using the programs, 28% of those who had heard of either program said they found it too difficult to sign up and 7% could not show proof that they qualified for it.

Gaps in awareness and usability have consequences when it comes to what people pay for service. Those who use free or discount offers pay, on average, $27 per month for home high-speed internet service. Among those whose incomes mean they likely qualify for these programs and who say the programs are not easy to use pay $58 per month for service.

Calls to action

Free and discounted offers represent real opportunities to narrow the digital divide. We propose the following calls to action to policymakers, internet service providers, and digital inclusion supporters to hasten solving the digital divide:

- **Fund awareness and adoption activities:** Trusted organizations, such as local public libraries and non-profit organizations, could effectively spread the word to populations in need of more information about free or discount internet and computer offers. But organizations can do this only if the funding matches the level of work required to generate awareness and drive adoption. Funding for these activities needs to be sufficient and sustainable.

- **Improve usability:** An internet connectivity initiative is of limited use if people cannot enroll in or benefit from strong internet service. Understanding those problems and soliciting ideas on how to address them directly from users and digital inclusion practitioners should be a priority, including improvements in enrollment processes and internet speeds.

- **Sustain free or discount programs:** Many low- and lower-middle income households struggle paying their monthly internet bill. Free is the right price for many, which means that discount programs that are $20 a month or less would be invaluable for them in conjunction with the $30 per month subsidy in the Affordable Connectivity Program.

We look forward to presenting additional calls to action in the third report.

Methodology

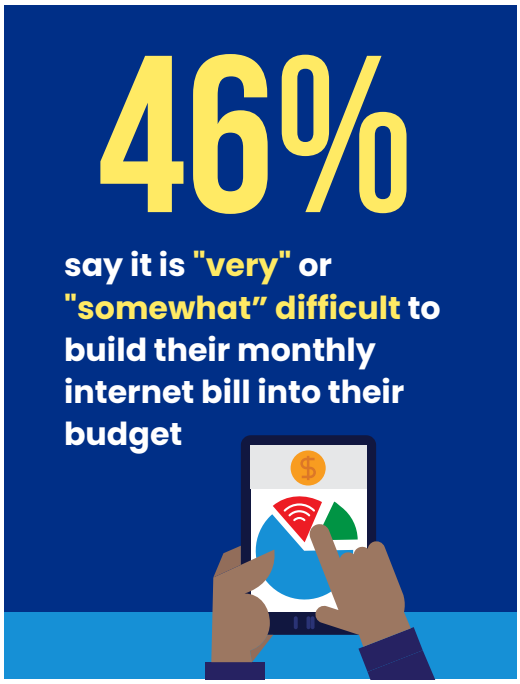
This report uses data from two national surveys of low- and lower-middle income households. One is an online panel of 2,512 respondents from SSRS, Inc., a survey and market research firm. It includes households whose annual incomes are $50,000 or less and have some online connectivity. Most (85%) have high-speed connections such as fiber, cable modem, or digital subscriber line service. Remaining online users have limited home access via cellular data plans, satellite, or dial-up service. The other survey was a telephone survey of 382 households with no internet connectivity at home, a sample aimed at understanding barriers to subscribing to internet service at home.

I. THE CENTRALITY OF AFFORDABILITY IN COMMUNICATIONS POLICY

Affordability of service has long been a foundational principle in communications policy. The Telecommunications Act of 1996, in section 254, states that "quality services should be available at just, reasonable, and affordable rates." But what is affordable? In the early days of the telephone business, there was the "pizza rule" – the shorthand for defining affordability for monthly service as the price of a medium pizza with two toppings.[1] That is around $20 today (and most places have many more choices for pizza than they do for internet service).

Turning to social science analysis is scarcely more precise than the pizza rule. Any affordability threshold is necessarily subjective in the minds of policymakers, businesses that provide service, and consumers. The Federal Communications Commission (FCC) defines a service as unaffordable if its cost exceeds 2% of consumers' disposable household income. A 2016 FCC report notes that in 2014 the cost of a fixed broadband connection for the 20% of the lowest-income households in the United States came to 2.47% of monthly disposable income. The approximate level of disposable household income for the lowest 20% of U.S. households is $22,000. Given that, affordable service (using the FCC's metric) would be about $46 monthly.

What counts as affordable may not be stable over time. The pandemic has exposed the fragility of household finances when it comes to affording the basics. The American Rescue Plan's Child Tax Credit payment – a monthly payment of between $250 and $300 per child for many families – has been indispensable for household expenses for lower-income families. Some 91% of households whose incomes are below $35,000 annually used the credit for food, utilities (including internet costs), rent or mortgage, clothing, or educational costs.



In this report, understanding how households view affordability for internet service will examine what households pay for service, how they view its place in their monthly service, and (for those without service) how they view challenges to having service that may include cost. This national survey of low- and lower-middle income households explores affordability through three questions:

- **What people pay for monthly broadband service:** The survey asked respondents to state, to the nearest dollar, what they pay monthly for internet service. Some 58% of all respondents do not bundle internet service with other services, such as television or telephone. The analysis in this report includes only responses for non-bundled plans since it is difficult for respondents to identify with any specificity the internet portion of a bill in a bundle. The average non-bundled monthly internet service cost for respondents with annual household incomes of $50,000 or less was $62.
- **Attitudes about whether people believe it is difficult to fit their broadband bill into their monthly service:** The survey asked respondents: "How difficult, if at all, is it for you to fit your monthly internet bill into your household's budget?" Some 46% said it was at least somewhat difficult, with 11% saying it was "very difficult" and 35% saying it was somewhat difficult." One-third (34%) said it was "not too difficult" to pay for service and 20% said it was "not at all difficult" to pay for service.
- **What non-internet users say about what they are able to pay for service:** A set of non-broadband subscribers were asked to identify the monthly internet fee that would be *too expensive* for their monthly budgets.

[1] Richard R. John, Network Nation: Inventing American Telecommunications. Cambridge, MA: Harvard University, 2010, p. 408.

II. THE LANDSCAPE OF AFFORDABILITY

KEY TAKEAWAY

Affordable internet service means "free" for 40% of low- and lower-middle income Americans and something below entry-level broadband prices for most.

Perhaps the most important finding from this analysis of affordability of internet service is that it does not mean one thing. Some low- and lower-middle income internet users say any monthly fee is a strain on their budgets. Others express an ability to pay something – but at a level below what entry-level service plans cost. A final group seems able to pay rates that align with entry-level broadband plans. The analysis below will show that for all non-broadband subscribers:

- 40% say they cannot afford to pay anything for a home internet high-speed service subscription.
- 38% say they can pay something in the range of entry-level plans (or somewhat above), that is, between $55 to $70 per month.
- 22% are comfortable paying about $25 per month.

A large majority of non-broadband subscribers (62%) would require significant cost relief (relative to market prices) to have broadband service at home.

This report builds on findings from two separate means of gathering data. The first is from a national survey using the online panel from SSRS, Inc., of respondents of low- and lower-middle income households. These are households whose annual household incomes were $50,000 or below. The other combines findings from a telephone survey of 382 non-internet users that SSRS conducted. Because this research seeks to understand why people without the internet do not have service, a telephone survey was necessary to reach those without the ability to participate in an online survey. These respondents, along with online panel members without a home high-speed subscription (i.e., these respondents only have online access through a smartphone, satellite, or dial-up service) make up non-broadband users for this analysis. Each of the three groups identified below combines respondents from each survey mode. Telephone and online panel respondents are weighted equally when combining results.[2]

What households pay, what service costs

The analysis begins by examining what people pay for service, with a focus on the price of service for those whose internet plans do not include bundled services, such as telephone or pay television. Respondents were asked to state, to the nearest dollar, what they pay monthly for internet

[2] Analysis of 2019 American Community Survey data and a survey of Philadelphia households in 2021 find that, among households whose annual incomes are under $50,000, half have some sort of connectivity (e.g., a cellular data plan) and half have no connectivity.

service. Some 58% of respondents in the online survey do not bundle their internet service and, on average, they pay $62 per month. The survey shows several differences in what people pay across different groups of users.

- Rural residents pay an average of $69 per month while those living in urban areas pay $59.
- Very low-income households (those whose annual incomes are $15,000 or less) pay $54 per month.
- People who sign up for free or discount internet plans pay an average of $27 per month for service. (A fuller analysis of these plans and how they figure into overall impacts on adoption rates follows later in the report.)

For those on non-bundled plans, the $62 average bill is in line (or slightly above) what entry-level plans are for many large carriers. According to BroadbandNow, carriers with large national footprints (e.g., Verizon, Comcast, Cox, Spectrum, and AT&T) have promotional rates that start at $40 or $50 per month – though Cox starts at $30. After a year, Cox's plan increases by $15 per month and AT&T's by $20.

Attitudes about affordability and ability to pay

The survey also showed that people report different monthly bills based on how difficult they believe it is to pay for service. Those who say it is "not at all difficult" to pay for service are paying much less *and* taking advantage of discount offers. Overall, those who say it is not too difficult to afford service pay $42 per month. This is a sizable $28 difference compared to those who say it is difficult to afford service; they report paying $70 per month. Some consumers paying less for service may be careful shoppers for service and seek out less expensive plans. In fact, when looking at what households pay across income categories, the lowest income (those whose annual incomes are $15,000 or less) pay about $54 per month. Importantly, however, much of the $28 difference is due to those signing up for discount offers. Some 9% of all respondents signed up for a free or discount offer and the average monthly service cost for the internet they report is $27. Those who have signed up for a discount offer and say they are comfortable with their monthly bill pay about $22.

Group 1: 40% of low- and lower-income households whose household budgets cannot support any service fee

Some 23% of connected low- and lower-middle income population express no ability to pay for home broadband at home. They say they would not subscribe to service at "the right price," suggesting that they may need a free offer to get started. The group of non-connected, non-broadband subscribers is larger; some 56% of this group say they would not subscribe to the internet at the right price. Overall, this comes to 40% of non-broadband users who would not subscribe to service. They would likely need substantial service subsidies to get online, as well as digital navigation services, finding a service plan, assistance installing it, and training on how to use computers and (safely and securely) the internet.

Group 2: 38% of low- and lower-middle income households for whom entry-level broadband prices are manageable

Remaining online low- and lower-middle income households come to 39% of all non-broadband subscribers (both with some connectivity and without) whose incomes are $50,000 a year or less. For households with internet connectivity, they find their service either not too difficult or not at all difficult to afford. They pay an average of $55 per month. This group seems satisfied with paying for service at costs in line with entry-level plans. For non-connected respondents, one-quarter cited a figure above $40 per month as too expensive, with the average figure being $72 per month. This set of non-broadband subscribers – again, 39% of all – seem able to support entry-level prices ($55 per month) or more.

Group 3: 22% of low- and lower-income Americans are able to pay something, but it is well below market prices

Attitudes about difficulty in paying for service helps define one group of broadband users' views on affordability. Among online panelists with some internet connectivity, some 27% of low- and lower-middle income households say they are comfortable paying something for service on a monthly basis – about $25. This is roughly the midpoint value of what people pay for discount offers ($27) and those who pay for such offers and find it "not difficult" to pay for service.

Those who do not have any internet subscription service (no broadband, satellite, or dial-up service) received a question asking them to identify a price at which service would be too expensive for them. Some 16% of non-subscribing respondents identified that on average, $25 would be too expensive for them.

Together, these two groups come to 22% of all households whose annual incomes are $50,000 or less who express an ability to pay about $25 per month for service.

III. BARRIERS TO BROADBAND ADOPTION

KEY TAKEAWAY

Cost is the primary barrier to having service for those without broadband at home. Digital skills are also a significant factor. Those who say they do not want or need service are older adults with very low incomes.

Understanding barriers to broadband helps put the affordability issue into broader context. Although many people may struggle to afford service, how does affordability rank among multiple possible reasons people do not have service? To address this, the survey asked respondents to select from a list which reasons were a factor in not subscribing to broadband at home. They could choose as many as applied. A follow-up question asked them to identify the *most important* reason they did not have service.

The other important point in the results that follow is that they include results from two different samples of non-broadband adopters:

1. Those with some internet connectivity (mostly through smartphones): These are 345 respondents from the online panel with connectivity through smartphones, dial-up, or satellite, but not fixed broadband. Demographically, 35% of this group is under the age of 35 and 18% are age 65 or older. Some 24% have household incomes of $15,000 per year or less and 23% have incomes between $15,000 and $25,000 annually. Only 35% live by themselves and 29% have children under age 18 in the house. Nearly one-quarter (23%) are Latino and 15% are African American.

2. Those who are not internet users at all: These are 382 non-internet users reached through the telephone survey portion for this report. The demographic profile of non-connected non-broadband subscribers is very different. Foremost is age: 57% are age 65 or older and just 4% are under age 35. They are also, on the whole, very low-income. Some 37% have annual household incomes under $15,000 and 26% have incomes between $15,000 and $25,000 annually. And 66% live on their own and just 5% have children under the age of 18 at home. Some 18% are Latino and 15% are African American.

These stark demographic differences translate into very different reasons the different groups cite for not having broadband.

TABLE 1: BARRIERS TO ADOPTION

	Online panel	Telephone respondents	All
The monthly cost of a home internet subscription is too expensive	64%	46%	55%
The cost of a computer is too expensive	45%	49%	47%
Your smartphone lets you do everything online that you need to do	60%	16%	38%
You have other options for internet access outside of your home	45%	18%	32%
You cannot get internet service installed at your residence	24%	12%	18%
You worry about the privacy and security of your personal data	34%	50%	42%
You are not comfortable using a computer or the internet	14%	51%	33%
You do not want or need high-speed internet service at home	31%	66%	49%
You have past-due bills to internet service providers	12%	27%	10%
It is too complicated to sign up	17%	29%	23%
Some other reason that has not already been mentioned	31%	27%	29%

As Table 1 shows, a wide variation between the two groups is evident throughout the findings, but they are clearest for perspectives on smartphones as a useful substitute for a home internet subscription, comfort with computers, monthly cost of service, and whether high-speed service is really necessary. Concerns about privacy and security of personal data are also more pronounced among those whose internet access is extremely limited or non-existent.

The differences are also clear when respondents state the most important reason (Table 2) that they do not have a high-speed internet connection at home.

TABLE 2: MOST IMPORTANT BARRIERS TO ADOPTION

	Online panel	Telephone respondents	All
The monthly cost of a home internet subscription is too expensive	35%	7%	21%
The cost of a computer is too expensive	10%	11%	11%
Your smartphone lets you do everything online that you need to do	27%	2%	15%
You have other options for internet access outside of your home	8%	2%	5%
You cannot get internet service installed at your residence	8%	3%	6%
You worry about the privacy and security of your personal data	2%	14%	8%
You are not comfortable using a computer or the internet	1%	9%	5%
You do not want or need high-speed internet service at home	4%	26%	15%
You have past-due bills to internet service providers	3%	1%	2%
It is too complicated to sign up	1%	1%	2%
Some other reason that has not already been mentioned	*	2%	1%

Prior experience with having internet service explains part of the differences in responses across the telephone and online samples. Telephone respondents – only 11% of whom have ever had service – do not think it is necessary and do not see the monthly cost of service as the most important obstacle. Those who have some connectivity (half of whom have had service in the past) cite cost-related reasons most frequently (i.e., monthly service, cost of computer, or past due bills) as the most important reasons. Many say smartphones are enough for them, although this group is also very likely to say they have service options outside the home.

There is, of course, an irony in the low likelihood of disconnected respondents citing cost of service as a barrier to adoption: many live at or near the poverty level. Having service would likely be a financial burden on their monthly budgets. This dynamic does not suggest cost is irrelevant to this group. It indicates that other barriers – digital skills or lack of awareness of the internet's benefits – warrant interventions to address *not instead of* affordability programs but *in addition to* them.

Summarizing the main reasons that low- and lower-middle income non-broadband subscribers cite for not having service shows that:

- 34% cite cost of the monthly subscription fee, computer cost, or past bills due.
- 15% say their smartphone lets them do everything online they need to do.
- 15% point to digital skills (i.e., they are not comfortable using computers, worry about privacy and security of personal data, or find signing up to be too complicated).
- 15% say they do not want or need service.
- 6% cannot have service installed where they live.
- 5% have other options outside the home.

Being without any access to the internet is a challenge for anyone these days. Those without access at home occasionally used alternatives outside the house. Specifically:

- 23% called a friend or family member and asked them to go online for them.
- 11% went to a friend's house to use the internet.
- 4% went to a local public library or used the library's Wi-Fi connection outdoors.
- 4% called a local community organization for help.

About one-third (35%) did none of those things.

IV. CONNECTIVITY DURING THE PANDEMIC: PROGRAMS MAKE A DIFFERENCE

KEY TAKEAWAY

Free and discount offers have boosted broadband adoption since the pandemic for 7 million households. But maintaining service is tenuous for half of respondents who are subscription vulnerable. Low levels of awareness of discount offers and difficulty in signing up are problems to address. Investing in trusted institutions such as libraries and non-profit organizations are promising strategies to improve awareness.

Survey results for the online panel of low- and lower-middle income households shows that a bit more than one in 10 owe their home high-speed connectivity to a free or discount internet plan. Some 85% of these households have a home broadband connection (the remainder rely on cellular data, satellite, or dial-up service) and 9% have signed up for a discount plan or service using the Emergency Broadband Benefit (EBB). Absent these programs, 76% of these homes would have high-speed service.

Low-income households with a student in kindergarten through 12th grade, and African American households have the highest incidence of using free or discount programs (see Table 3).

TABLE 3: IMPACT OF FREE OR DISCOUNT PROGRAMS

	All	Black	<$15K	$15K-$25K	K-12
A high-speed, broadband internet service such as cable, fiber optic, or DSL service installed in your household	85%	86%	80%	82%	87%
% who signed up for a discount program	9%	16%	15%	15%	16%
% absent discount programs	76%	70%	65%	67%	71%

These figures are, to a significant extent, a "before and after" look at connectivity since the pandemic's onset, because the questions were framed around whether respondents had signed up for free or discount programs "since the pandemic" began. For the groups noted above, the presence of these programs narrowed or erased the digital divide with respect to home high-speed connectivity. As to other groups, 10% of Latinos said they had signed up for a free or discount program and 84% of Latinos in the online panel had home high-speed service.

Older adults are a distinctive group. Some 63% of those age 65 and older in the online panel report having a high-speed internet subscription at home. Only 4% say they use a free or discount offer for service.

Overall, free and discount offers mean that 7 million more households with incomes $50,000 or less have connectivity since the pandemic's start because of free and discount programs, and the EBB subsidy. Some 37% of these households say that without the free or discount programs, keeping service would be difficult for them. Some 12% say keeping service would be "not at all easy" and 25% say it would be "not too easy."

Subscription vulnerability

Although advances in broadband adoption are encouraging, there is evidence that connectivity is tenuous for many households. A few data points illuminate this:

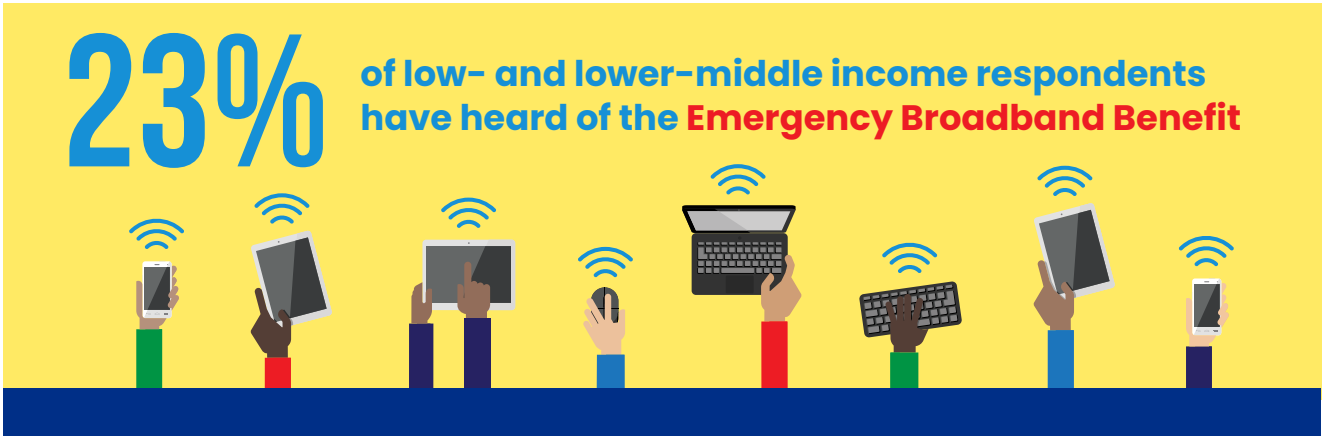
- 18% of low- and lower-middle income households said that since the pandemic they experienced a service interruption due to difficulties in paying their monthly internet service fee.
- 40% searched for a more affordable internet service plan during the pandemic.
- 46% say it is very or somewhat difficult to fit their monthly internet service bill into their budget, with 11% saying it is "very difficult" and 35% saying it is "somewhat difficult."

Combining those who lost service, those who said fitting the internet into their budget is very difficult, and those living at or near the poverty level yields a portrait of those who are likely to be subscription vulnerable. To develop an estimate for poverty in this sample, we use respondents' self-reported income levels, which fall into the following categories: less than $15,000 annually, between $15,000 and $25,000, between $25,000 and $30,000, between $30,000 and $40,000, and between $40,000 and $50,000. Because respondents also identify the size of their households, it is possible to adjust for household size. This exercise yields an estimate of 30% for the share of households whose incomes are below $50,000 annually who are at or below the poverty level. By comparison, 2019 ACS data shows that 28% of households whose annual incomes are $50,000 or less live at or below the poverty line.

Examining connectivity through the lens of poverty, whether people lost service during the pandemic, or whether they find it very difficult to afford service, shows that 49% of all low- and lower-middle income households have home broadband subscriptions.

A sizable portion of the "subscription vulnerable" rely on free or discount programs. Some 34% use one of those programs for home connectivity. About the same number (32%), however, say it is too difficult to sign up for one of those programs. Another 26% say they do not qualify (even if it is likely that most do) and 8% say they could not demonstrate that their households qualify for such offers.

The difference in what the subscription vulnerable pay for service is also worthy of note. Those in the subscription vulnerable category who use free or discount programs pay an average of $27 per month for service. Those who say that signing up for service is too difficult pay, on average, $58 per month.



Awareness of programs

The variation in uptake of free or discount offers raises the issue of awareness of them. Many programs encourage connectivity aimed at K-12 households - it may be that outreach efforts had something to do with increasing awareness. Of all households whose annual incomes are below $50,000 (e.g., those from both the online panel and telephone survey):

- 32% had heard of local public libraries increasing their Wi-Fi signals so people could go online for free.
- 25% had heard of discount or free internet offers such as those offered by Comcast Internet Essentials, T-Mobile, Cox, or Charter.
- 23% had heard of the Emergency Broadband Benefit.

This comes to 37% of all respondents who had heard of either free or discount offers or the EBB. The table below shows variation across different user categories.

TABLE 4: AWARENESS OF FREE OR DISCOUNT PROGRAMS

	<$25K	K-12	Black	Latino	65+
Discount or free internet offerings, like those offered by carriers such as Comcast Internet Essentials, T-Mobile, Cox, and Charter	31%	36%	37%	31%	16%
The federal government's Emergency Broadband Benefit, which provides qualifying households a $50 per month discount on their internet bill	28%	29%	30%	21%	18%
Local public libraries increasing Wi-Fi signals so people can go online for free	36%	38%	38%	34%	28%
Heard of either free/discount offers or EBB	43%	48%	48%	41%	26%

On the whole, there is significant room for improvement in getting the word out about discount offers and the EBB. This is particularly the case for Latinos and older adults. Language barriers may have something to do with findings for Latinos. A recent survey in Philadelphia showed that survey respondents who opted to take the survey in Spanish had significantly lower broadband adoption rates than Latinos who chose to take the survey in English. This suggests that respondents for whom Spanish is the primary language are less likely to be online – and perhaps less likely to be aware of programs that might help them gain connectivity.

One element in the awareness equation is trust. Respondents have significantly different levels of trust in institutions that may provide information on free or reduced internet offers. They received a question that read: "When learning about new benefit programs, such as discount internet offerings, how much do you trust the following entities to provide reliable information about such programs?" The results for those who said they trust the following institutions "a lot" were as follows for all households whose annual incomes are $50,000 or below:

- 31% trust local public libraries a lot.
- 20% said they trust schools.
- 14% trust community non-profits.
- 8% trust internet service providers a lot.

For those who trust any of these institutions "a lot," 42% have heard of either a free or discount program, or the EBB. For those who do not trust any institution "a lot," just 24% have heard of these programs.

V. COMPUTER OWNERSHIP

KEY TAKEAWAY

One-quarter (26%) of connected households purchased a computer since the pandemic began in order to meet household computing needs.

The latest government data on computer ownership in the United States shows significant deficits for low-income households compared with all others. The table below shows American Community Survey data for 2019 for computer ownership.

TABLE 5: AMERICAN COMMUNITY SURVEY DATA ON DEVICE OWNERSHIP

	Households whose incomes are $25,000 per year or less	Households with incomes greater than $50,000 per year
Computing devices		
Desktop or laptop computer	54.9%	88.8%
Tablet computer	41.2%	73.8%
Smartphone	76.5%	93.6%
Either desktop/laptop *or* tablet	58.7%	92.9%

Source: American Community Survey 2019

During the pandemic, people took steps to address these gaps. Some 26% of all respondents in the online panel purchased a new computer since the pandemic's onset, a figure that was about the same (25%) for lowest income households (that is, those whose annual incomes are less than $15,000).

For the EveryoneOn national survey, as noted, the sample has two parts: connected households from an online panel and non-connected households from a telephone survey. The results show very sharp differences in all device ownership between the two samples.

TABLE 6: COMPUTING DEVICE OWNERSHIP

	Online panel of internet users	Phone sample of non-internet users
A smartphone, such as an iPhone, Android device, or Windows phone	96%	19%
A desktop or laptop computer	89%	11%
A tablet computer like an iPad, Samsung Galaxy Tab, Google Nexus, or Amazon Fire	64%	6%
Cable or satellite TV subscription	48%	53%

Beyond the demographic differences in these two groups noted above (i.e., the telephone sample of respondents is older, lower-income, and more likely to live alone), past home internet use is another differentiator. For the online panel, 51% have subscribed to home high-speed internet service in the past, while only 11% of telephone respondents have.

Within the sample of connected respondents, there are not large differences in device ownership when looking at subgroups in the sample. The largest differences, when looking at income, is the number of computers in the household, with higher income respondents in the sample more likely to have multiple computers on hand.

TABLE 7: DESKTOP AND LAPTOP OWNERSHIP BY INCOME

	<$15K	$15K-$25K	$25K-$30K	$30K-$40K	$40K-$50K
A desktop or laptop computer	83%	85%	90%	92%	94%
A tablet computer	57%	59%	66%	68%	68%
# of computers	1.5	1.7	1.9	2.1	2.2
# of tablets	1.0	1.1	1.3	1.2	1.8

Differences across racial and ethnic categories are not significant and the same is true for geography.

TABLE 8: DESKTOP AND LAPTOP OWNERSHIP BY RACE/ETHNICITY AND GEOGRAPHY

	White	Black	Latino	Rural	Non-rural
A desktop or laptop computer	91%	88%	88%	88%	90%
A tablet computer	63%	67%	64%	63%	64%
# of computers	1.8	1.7	1.7	1.7	1.8
# of tablets	1.1	1.2	1.1	1.1	1.1

For connected households with school-age children, figures show higher rates of computer ownership as household size increases.

TABLE 9: DESKTOP AND LAPTOP OWNERSHIP IN HOUSEHOLDS WITH CHILDREN

	All	1 child	2 children	More than 2
A desktop or laptop computer	88%	91%	88%	87%
A tablet computer	73%	64%	83%	78%
# of computers	1.8	1.8	1.9	2.1
# of tablets	1.5	1.1	1.8	1.7

It is quite possible that households with children have taken advantage of initiatives to put more computers in the hands of students. Some 65% of respondents had heard of initiatives by schools to provide computers to students in need and 32% had heard of similar undertakings by local non-profits. Census Pulse data indicates that these initiatives have made a difference. According to that data, in June 2020, 65% of households with children said a computer was always available for educational purposes. A year later (June 2021), that figure was 78%. A recent survey in Philadelphia underscores this, as 57% of households with school-age children said that since the pandemic they had received a computer for their children for schoolwork.

A final point pertains to computer affordability and, again, results from the different samples of respondents differ. The survey asked respondents, within a range of possible prices, to state what they would consider too expensive.

TABLE 10: AFFORDABILITY OF COMPUTERS

	Online panel of internet users	Phone sample of non-internet users
$50	1%	25%
$100	3%	12%
$150	4%	5%
$200	9%	8%
$400	27%	13%
More than $600	56%	26%

For the online panel, some respondents – 17% – cite $200 or less as too expensive. For the disconnected sample contacted by telephone, half say something under $200 would be a struggle in terms of computer costs, with 25% saying even $50 would be too much.

VI. CONCLUSION

The COVID-19 pandemic shed light on the depth of the digital divide and moved the country to respond to the severe challenges it created, in particular for income insecure households and communities of color. Existing barriers to affordable internet service, computers, and digital skills trainings stymie access to resources, services, and opportunities, which in turn deepen educational and economic gaps. These gaps have implications on a household level and the broader economy. Fostering digital equity for all, and in particular those hardest hit by the pandemic, is imperative.

While recent investments in digital inclusion activities will have significant positive effects, the research findings in this report remind us that there is more work to be done to ensure every household in the country has the opportunity to benefit from these investments now and in the future.

EveryoneOn looks forward to sharing the next two reports and using the data to amplify the importance of prioritizing digital inclusion and equity:

- Report 2 (January 2022 release): Digital Skills Trainings as Critical to Digital Inclusion
- Report 3 (February 2022 release): Insights from Households Affected by the Digital Divide and the Organizations that Support Them

In the meantime, you can find us connecting people to the Emergency Broadband Benefit, delivering virtual skills trainings, and collaborating with our diverse partners nationally and locally. We invite you to learn more about our work at www.everyoneon.org and on Twitter, Linkedin and Facebook @EveryoneOn.

Appendix A

DEMOGRAPHICS: EVERYONEON SURVEY

	Online panel (all)	Online panelists with broadband at home	Online panelists without broadband at home	Telephone respondents (those without broadband at home)
Gender				
Male	42%	42%	42%	48%
Female	56%	56%	55%	51%
Other	1%	1%	2%	1%
Age				
18-24	13%	13%	15%	1%
25-34	17%	17%	20%	3%
35-44	14%	14%	12%	7%
45-54	13%	13%	11%	13%
55-64	15%	15%	14%	17%
65+	23%	24%	18%	57%
Refused	5%	4%	9%	2%
K-12 kids at home				
Yes	33%	34%	29%	5%
Education				
Less than high school	8%	8%	7%	25%
High school graduate	40%	38%	50%	41%
Some college (includes community college)	34%	35%	30%	22%
College degree or more	18%	19%	13%	12%
Race/ethnicity				
White	56%	57%	56%	59%
Black	16%	16%	15%	15%
Latino	18%	18%	23%	18%
Asian	3%	3%	3%	3%
Other	5%	5%	4%	4%
Income				
Less than $15,000	18%	17%	24%	37%
15 to under $25,000	19%	18%	23%	25%
25 to under $30,000	11%	11%	9%	7%
30 to under $40,000	24%	24%	24%	8%
40 to under $50,000	28%	29%	19%	3%
50 to under $75,000	*	*	*	2%
75 or greater	*	*	*	3%
Don't know/refused	*	*	*	8%
Number of cases	2,512	2,131	345	382

Appendix B

Methodology

The Survey of Low-income U.S. Households was conducted online via the SSRS Opinion Panel and invited U.S. adult internet users ages 18 and older with an annual household income of less than $50,000 to participate. Data collection was conducted from July 8-22, 2021 among a sample of n=2,512 respondents in English (n=2,452) or Spanish (n=60). Statistical results are weighted to correct known demographic discrepancies. The margin of sampling error for the complete set of weighted data is ± 2.7 percentage points. The telephone survey of non-internet users had a sample size of 382 and was completed on August 3, 2021. The margin of error for that survey was ± 5 percentage points.

Overview of SSRS Opinion Panel Recruitment

The SSRS Opinion Panel is a nationally representative probability-based multi-mode panel. Internet households participate via web, while web-reluctant (those who have internet but are unwilling to take surveys online) or non-internet households participate via phone. SSRS Opinion Panel members are recruited randomly in one of two ways: (1) Through invitations mailed to households randomly sampled from an Address-Based Sample (ABS) frame; (2) Through a dual-frame random digit dial (RDD) sample via the SSRS Omnibus survey platform.

SSRS Opinion Panel members are recruited randomly based on nationally representative ABS design (including Hawaii and Alaska). Households are randomly sampled by SSRS sister company Marketing Systems Group (MSG) through the U.S. Postal Service's Computerized Delivery Sequence File (CDS), a regularly updated listing of all known addresses in the United States. For the SSRS Opinion Panel, known business addresses are excluded from the sample frame.

Additionally, the SSRS Opinion Panel recruit harder-to-reach demographic groups via the SSRS Omnibus survey platform. The SSRS Omnibus survey is a nationally representative (including Hawaii and Alaska) bilingual (English/Spanish) telephone survey designed to meet standards of quality associated with custom research studies. The SSRS Omnibus completes more than 50,000 surveys annually with 80% cell allocation. Sample for the SSRS Omnibus is obtained through MSG.

Sampling Procedures

Sample is drawn based on panel profile data to achieve a demographic composition as close to Census targets as possible. Sample was stratified by age, gender, race and ethnicity, and education to ensure adequate representation of each. We monitored field progress to see if the yields were lining up with Census targets and invited additional panelists as necessary to get closer to the Census parameters for the target population.

everyoneon

www.everyoneon.org

@EveryoneOn
on Instagram, Facebook, Twitter, and LinkedIn